

Consumers' Research

BULLETIN

**TV Receivers
for 1954**

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Small Radio Receivers

•
Men's Jackets

•
Meat Thermometers
Home Power Plants
Pocket Name Stamps

COMPLETE CONTENTS ON BACK COVER

Consumers' Research Bulletin

OFF THE EDITOR'S CHEST

THIS is the season of the year when male parents are lined up around exhibits of mechanical train sets and accessories, while mothers are debating the merits of a Space Cadet suit vs. a Roy Rogers cowboy outfit. One of the factors to be decided is whether ordinary brown oxfords will be happily worn with the cowboy outfit or whether boots will be required to complete the picture. The toy trend this year is toward functionalism and realism, according to trade publicity. It is even reported that the emphasis has shifted from War, Space, and Westerns to real life articles such as scale model bucket loaders, two-way telephone sets, a toy electric range that actually cooks and bakes, a vacuum cleaner with cleaning suction action, and a miniature electric iron, not to mention a small working sewing machine.

For the sum of \$495—that is four hundred and ninety-five dollars (not \$4.95)—there is listed in one toy catalog a diminutive battery-powered sports car (F.O.B. New London, Conn.) that can be driven (not, of course, on the public roads) at the speed of a fast walk. In earlier days, swank toy shops used to feature a hobby horse of near life proportions or a toy pony and cart that was large enough to hold at least one small child. No doubt the horse or pony is now outmoded by the motor car, even in Toyland.

There is practically no limit to the toys that are small replicas of real-life objects; cameras, telephones, printing presses, looms for weaving, accordions, and even a cash register are to be found in well-stocked toy departments. The bill that can be run up for Christmas toys of this type, particularly where there are several children in the family, is something staggering to contemplate. It is well to bear in mind, however, that psychologists have noted that too great a variety of playthings is apt to be distracting and no one toy is fully explored. If there are too many toys, breakage will seem to be of little consequence and a child will not learn to take care of his things, a habit that may all too easily be carried over into adulthood where it can have serious consequences.

There are so many toys with adult appeal that it is not surprising that loving aunts and uncles who may have no children of their own take great pleasure in buying some expensive and novel item for a little niece or nephew. Many wise mothers whose children have

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Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries out tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

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The Consumers' Observation Post

AUTOMOBILES ARE PRICED TOO HIGH. That's not only the opinion of consumers, but of experienced dealers as well. The problem is not so much one of getting rid of new cars as selling secondhand ones. According to Business Week, the new car dealer swamped with an excess of new cars that don't sell rapidly enough may find it expedient to unload his surplus on a used-car dealer for as little as \$25 above factory price. These cars can then usually be disposed of as secondhand cars at a small profit. The selling of cars that have actually seen service, however, is more of a headache. It is reported to be the general practice of many dealers to arrive at the resale price of a turn-in by adding \$200 to the price paid or allowed. When the price of a new car is high, the turn-in value is high and the secondhand price stays up. Dealers say that when the prices of new cars drop, used-car prices go down also. The first sign of an excess of cars over buyers usually shows up in the used-car market.

* * *

SOMETHING NEW IN THE WAY OF A FIRE EXTINGUISHER has made its appearance. Known as a Fire Ball, it consists of a glass ball filled with eight ounces of carbon tetrachloride to hang near the top of a Christmas tree. The idea is that if the tree catches fire and generates heat of 160°F, there is a trick arrangement that will release a spring in the gadget which in turn will release a metal bar that will strike the ball, causing it to break and release the carbon tetrachloride, according to The Wall Street Journal. This is a novel form of the carbon tetrachloride "grenade" discussed in CR Bulletin, November 1953; grenades are generally ineffective, and involve special danger in some circumstances because of the phosgene gas released by the vaporizing liquid in the presence of heat.

* * *

TELEVISION SERVICING is the subject of much complaint among consumers who have bought "lemons" or whose sets are beyond the guaranty age. In fact, the situation is so bad that Radio & Television News recommends that a public relations program of some kind be set up to eliminate misconceptions on the part of the average owner who has been led to believe that his set will require little or no attention and who considers it an outrage to be charged \$5 for an inspection by a serviceman who comes to the house to see what is wrong with a set that fails to work properly. As the magazine puts it, it seems that most people assume that "all service businessmen are shady characters who leech a living from those who own TV sets."

* * *

THE NEW TRANSISTOR HEARING AID is still at an unperfected stage, although it is being widely advertised as a new scientific marvel. The Council on Physical Medicine and Rehabilitation of the American Medical Association reports that at the present time the most important advantage that can be claimed for the new development is an appreciable reduction in the operational cost, as much as 80 percent. The Council notes that there does not seem to be any significant improvement in amplification, in tone quality, or in fidelity of the transistor aids over aids of other types and advises the purchaser to obtain a written guarantee to cover possible mechanical and electrical defects in a new instrument.

* * *

THAT A WORN, CHIPPED, OR ROUGH PHONOGRAPH NEEDLE can seriously damage a phonograph record on which it is played is no news to high-fidelity enthusiasts who have long followed CR's reports in the field. Back in 1945, 1946, and 1947 when we presented the results of the first laboratory wear

tests of various kinds of phonograph needles, and of phonograph records, the trade was considerably shocked at our findings. We were exceedingly pleased therefore to note at the New York Audio Fair that the importance of a phonograph needle or stylus with a smoothly rounded, unworn tip was stressed by a number of exhibitors, with effective photographs showing worn and flattened points, and appropriate warnings on how quickly a rough or uneven tip would chew up cherished records. One dealer conducted a needle clinic, inviting patrons of the Fair to bring in their styli for free examination under a binocular microscope. For those who do not have access to a microscope for regular checking of their phonograph needles and styli, the Audak Co. (500 Fifth Avenue, New York 36) has developed a test record which is a record blank of soft material. When the stylus is placed on the record and allowed to run, the record grooves will be altered so as to give the record a gray appearance if the point is seriously worn or defective. The price of the record is around \$3.90, and it is good for some 20 tests of a stylus on the long-playing side; 10-15 on the 78 rpm. side.

* * *

HOTEL BILLS can now be handled on a "charge it" basis by a new plan for hotels that are members of the American Hotel Association. Here's how the system works. "Travelcards" will be issued to business firms for use of their employees for a fee of \$5 per card a year. The "travelcard" assures the holder of credit for charging of hotel bills, including food and other services, as well as limited check-cashing privileges. For individuals who have satisfactory credit records, "Chekards" will be issued at a charge of \$6 a year, which includes the privilege of cashing checks up to \$100 per week. There is a higher rate charged for larger check-cashing privileges. Travelcards and Chekards can be obtained from hotels that are members of the American Hotel Association or from the American Hotel Credit Corp., Greenwich, Conn. We shall be pleased to learn from subscribers just what their experiences are with the new credit card plan.

* * *

THE NATIONAL BUREAU OF STANDARDS has been sustained in its finding that the battery additive AD-X2 is "without merit" by a committee of eminent scientists, headed by Dr. Zay Jeffries, internationally famous metallurgical engineer. The group was appointed by the National Academy of Sciences at the request of Secretary of Commerce Weeks to evaluate the scientific aspects of the campaign by the product's promoter and manufacturer, Jess M. Ritchie, to override the Bureau's scientific work with the aid of faculty members at the Massachusetts Institute of Technology, and personnel of the Senate Small Business Committee. After holding detailed hearings and considering extensive evidence from all interested parties, including Mr. Ritchie, the committee unanimously came to the conclusion that the quality of the work of the Bureau of Standards in the field was excellent and that there was no need to carry on additional tests to evaluate the product. The report concluded that "the relevant data now available to the committee on the effects of AD-X2 are adequate to support the position of the Bureau of Standards that the material is without merit."

* * *

NEW TEXTILES are appearing on the market so frequently these days that the consumer is hard pressed to keep up with the names, let alone finding out about their performance, how well they will launder, keep their original color, and resist spotting. There are fabrics made from synthetic fibers, such as nylon, Acrilan, Dacron, dynel, Orlon, and Vicara, as well as new finishes for the familiar cotton, wool, and rayon, to give them greater crease-resistance, spot-resistance, shape-retention, and dimensional stability - a fancy term for minimal shrinkage. The technology of textiles is so complex that few consumers realize that three different garments made from the identical fabric may give totally different performances ranging from unsatisfactory to good. The cause of dissatisfaction with one particular garment may be due entirely to the fact that the fin-

(The continuation of this section is on page 31)

Television Receivers—1954



FOR the past several years, as television was becoming increasingly popular, the size of the picture tube used in a family's TV receiver has played a part in determining the family's standing among their relatives and friends. The hundreds of thousands of families that were among the first to purchase expensive television receivers with what was then known as the "large 10-inch tube" felt somewhat chagrined when a year or two later they saw a new console receiver being installed at the Joneses which had the latest 12½- or 16-inch viewing tube, yet cost less than the quickly "antiquated" table model with the 10-inch tube. The situation closely paralleled that with respect to the family car; the family that drives an out-of-date model feels a bit out of things if the Joneses next door have acquired an up-to-the-minute car with all the latest features and gadgets and eye-catching chrome-plated trim.

Picture tube size can no longer be taken as a reliable yardstick for measuring family prestige, for the most popular tube size has "leveled off" more or less at 21 inches, and even the somewhat smaller 17-inch tube is considered amply large for a set used in a relatively small living room. These we believe will quite likely continue to be the most popular sizes used in home TV receivers for some time to come.

The implications in the preceding paragraphs are important to today's buyers of TV sets, for there is a good possibility that some manufac-

If the cost of a receiver is not a major consideration, and best picture quality is desired, CR's choice of a 21-inch TV set, from the group of 1954 models tested, would be the DuMont. If good sound quality is deemed important, the Magnavox is to be preferred. If price must be considered, the Admiral T2222 at \$220 would be a good selection with regard to cost and picture quality.

turers will offer color TV receivers in late 1954 or early 1955. The first receivers may be expected to be very expensive, in the \$700 to \$900 bracket, and so will definitely be luxury items; they are likely to use *small*—14-inch—viewing tubes. CR advises subscribers who must watch their expenditures not to jump on the "color band wagon" too soon. There is every reason to believe that picture quality and color rendition will improve and that picture area will be increased in succeeding new model receivers, and this is likely to take place at a good deal faster pace than has occurred with sets showing pictures in black and white. There is good reason to believe, however, that it will be three years and possibly longer before the purchase of a color set will be practical, i.e., safe from a cost and "investment" standpoint, for the average

consumer who has to be careful of his expenditures.

The owner or prospective purchaser of a black and white TV receiver need have no fear that his receiver will become obsolete with the advent of color TV. It is unlikely that all telecasts will be in color for many years, if ever, and since the system which is expected to be adopted is a so-called compatible one, "black and white" receivers will be able to receive—in black and white—all programs telecast, without any modifications to their receiver. There is reason to believe, moreover, that reception of a color telecast in black and white will be somewhat better than a corresponding black and white transmission. It will hardly be practical to convert a "black and white" receiver for reception in color, however, as was a possibility with the non-compatible CBS system of some years ago. The new system is "all-electronic," and in addition to requiring more complex circuit arrangements, which will need to be made to closer engineering tolerances, also requires a special viewing tube which is very costly to make; it is estimated that the 14-inch picture tube alone will cost around \$200.

If you have concluded that you just have to have a TV receiver at this time, or your present receiver is one of ancient vintage with a small tube, and a change is contemplated for that reason, it might be wise to consider purchase of a relatively inexpensive table model. Then, if a color receiver becomes a "must" for your family two or three years hence, the monetary loss on the turn-in will not be too large. Cabinets for console models add considerably to the cost of a receiver, and it is doubtful that a reasonable proportion of this extra cost can be realized on a trade-in or resale.

Overstocking of 1953 models apparently prevails in many if not most sections of the country, and models of practically all brands are being offered at very substantial discounts, 10 up to 40 percent, perhaps even more where the make has poor acceptance or is not well known. Consumers' Research has not found any major design changes in the twelve 1954 receivers it has tested up to now, nor has it seen any announcements in the technical literature which would warrant the purchase of a 1954 model in preference to a good 1953 set if the latter is available at a substantial discount. For this reason, brief listings of sets of 1953 models tested by Consumers' Research during the past year have been included. A possible exception to purchase of a 1953 receiver would be in those areas in which Ultra High Frequency telecasts (UHF)

have become available and reception and programming are of such quality that viewing on the new band may be expected to add to one's pleasure in use of the receiver. Much experience has been gained during the past year, and it is to be hoped that those 1954 model sets which have a built-in UHF converter, or provide for one, will offer improved UHF reception, particularly in regard to problems of circuit stability, and freedom from drift, factors which have been somewhat annoying in some instances in the 1953 sets. Reports from the field indicate that the UHF plug-in strips for installation in VHF tuner front-ends have not proven too satisfactory. The problem of radiation from the UHF converters would seem to be still of considerable importance, and you may find that you are spoiling or interfering with your neighbor's TV reception when you are receiving a UHF station. The problem of radio-frequency (r.f.) radiation from the regular or Very High Frequency (VHF) receivers became so important only a few years ago that it was necessary for the industry to set up measures to police itself in this regard; it would appear that a similar action is called for, immediately, with regard to UHF sets and converters.

The prospective purchaser of a television receiver is confronted with a multitude of slogans and claims in the advertising in newspapers and magazines and on television programs (see p. 5) salesmen, too, will use terms that may mean little either to themselves or to the customer. It is CR's suggestion that the consumer will be well advised to disregard the current lot of special terms and slogans in deciding upon a set, as these are of interest and value more to sellers and advertisers than to consumers. Choice is best made on the particular merits of each receiver under consideration as discussed in the listings and as judged by the consumer on the basis of what he sees and hears in use of the receiver. The slogan is the ad-man's "noise maker" and just as a town-crier would have had difficulty in getting attention of the townsfolk without his bell, so the advertising writer feels he could do little to get his product noticed without use of his particular kinds of visual and verbal attention-getters.

Transistors, which have been widely publicized in the past year as the coming replacement for the vacuum tube, are not yet ready for use in TV receivers. Their present cost is high, and they are not yet sufficiently reliable in operation, as one manufacturer of hearing aids discovered. CR advises caution in the purchase of a radio, television, or other electronic equipment for consumer use which is equipped with transistors.

It may be some years before such a purchase will be a safe one, from the standpoint of assured and lasting good performance and servicing at reasonable cost.

Although there are normally many different models in most manufacturers' lines, the practice was adopted by many of the large firms of employing one of two basic chassis in their receivers. The less expensive receivers in a particular line were equipped with a so-called "competitive" chassis which was originally designed to be used mainly in urban areas not too far (up to 35 miles) from a TV station. The so-called de luxe chassis represented the manufacturer's best effort and was to be preferred for use in fringe areas. CR's tests indicate that one cannot assume with any certainty that any particular maker's top models will always be better than another's competitive models, since it may sometimes happen that a de luxe chassis of one manufacturer is found to be inferior in performance to the competitive or low-end model of another, both in regard to fringe-area operation and picture clarity. In the listings, if it was known that the competitive chassis was used in the receiver tested, that information is noted.

Wide voltage variations are often a problem in some suburban and country areas; may at times be troublesome in cities and towns depending upon the operating procedures and distribution equipment of the power company. In the reduced line-voltage test, each receiver was operated at 100 and then at 90 volts.

In the listings, all TV receivers were for use on 115-volt a.c. only and were listed by the Underwriters' Laboratories. Unless otherwise noted, shock hazard on screws, shafts, shields, etc., which might be touched at the exterior of the cabinet was below the permissible limit set by CR. The r.f. radiation emitted by the receiver was measured at the antenna, power line, and chassis; the presence of excessive radiation has been mentioned, when present.

A. Recommended

Admiral, Model T2222 (Admiral Corp., Chicago)
\$220.

A receiver of good performance; well constructed, with a good circuit and components.

A table model with 16 tubes plus 2 rectifiers and a 21WP4 picture tube which gives a smaller picture than the regular-sized 21-in. picture tubes; picture mask size, 16 $\frac{1}{4}$ in. wide x 13.5 in. high¹. Molded plas-

¹The usual mask size with 21-inch tubes is about 18 $\frac{1}{2}$ in. x 14 in.
²On the basis of 4.25 hr. of operation daily with electricity at 3.5¢ per kw-hr.

tic cabinet of average construction. Estimated monthly operating cost, 85¢.² The picture as received was quite steady and of average resolution. Brightness was very good; interlace was average, with a slight tendency to line pairing. Sensitivity, or the inbuilt capability to receive stations acceptably in fringe areas, very good. Noise level, low. Operation at reduced line voltages, satisfactory, a desirable attribute particularly in those areas in which large variations in line voltage commonly occur. Quality of sound output from 5-in. speaker, average for a table-model TV receiver. (Estimated acoustical range, 150 to 5500 c.p.s.) A continuous-tuning UHF converter is available, also plug-in strips for the standard tuner; neither was tested. ¶Chassis No. 19F1, used in the receiver tested (Admiral's competitive chassis), is similar to Admiral chassis 19B1, 19C1, 19F1A, 19H1, and 19K1.

DuMont, Model 21T366, Lynwood (Allen B. DuMont Labs., Paterson, N.J.) \$370.

The picture section of this receiver was judged the best of the receivers tested. Sound quality, however, was only average.

A console model with 22 tubes, 3 rectifiers, and 21-in. picture tube; picture mask size, 19 in. wide x 13.8 in. high. Cabinet of wood construction, considered well built. Estimated monthly operating cost, \$1.10, relatively high (equivalent in cost to the operation of 10 table-model radios). The picture as received was quite stable, with no tendency to drift. Picture fidelity (resolution) and interlace were excellent; brightness was good. Sensitivity, very good, and ample for good fringe-area reception. Noise level in picture (snow), desirably low. Operation at reduced line voltage, poor. Quality of sound output from 9-in. speaker was judged average. Estimated acoustical range, 60 to 6000 c.p.s. Low-frequency distortion was high. A separate UHF tuner is available but was not tested. ¶Chassis No. RA-170, used in receiver tested, is identical to No. RA-166/167 and No. RA-170/171. One of these chassis is used in Models 17T350 Chatham, a 17-in. table model at \$250; 21T359 Oxford, a 21-in. table model at \$300; and in the following 21-in. consoles: 21T327 Ridgewood "41"; 21T328 Wakefield "41"; 21T329 Essex; 21T366 Lynwood; 21T376 Somerset II; and 21T377 Newbury II; at \$370 to \$495.

General Electric, Model 21C116 (General Electric Co., Electronics Park, Syracuse) \$350.

Generally somewhat above average in over-all quality. The chassis, which is a new design, is much to be preferred to the one which was used in 1952 and 1953 GE models.

The console model tested was equipped with GE's "competitive" "F" chassis, which utilizes 17 tubes plus 2 rectifiers, a crystal detector, and 21-in. picture tube; picture mask size, 18.5 in. wide x 13.3 in. high. Cabinet was of light wood construction, but considered well made. Estimated monthly operating cost, \$1.10, higher than average. The picture as

received was quite steady, but brightness was somewhat below average. Interlace and picture fidelity were considered good. Sensitivity, good on high band, below average on low band. Noise level in picture, low. Operation at reduced line voltage, fair. Quality of sound output from 10-in. speaker, better than average. Approximate acoustical range, 45-6000 c.p.s. Provision was made for a separate UHF tuner, but the tuner was not tested. ¶A similar chassis is used in *GE 17T15*, 17-in. table model at \$190; *21T10* and *21T12*, 21-in. table models at \$240 and \$290; *17C127*, 17-in. console at \$270; *21C115*, *21C117*, *21C119*, *21C120*, *21C121*, *21T4*, and *21T14*, 21-in. console models at \$300 to \$420.

Magnavox, Model MV 107L-6 (The Magnavox Co., Fort Wayne 4, Ind.) \$340.

Audio quality, cabinet work, and sensitivity were above average in this receiver. Picture quality was average.

A console model with 18 tubes, 2 rectifiers, and 21-in. picture tube; picture mask size, 18.5 in. wide x 13.5 in. high. Cabinet was of wood construction, heavy and well built. Estimated monthly operating cost, 90c, average. The picture as received was quite stable, with no tendency to drift. Picture resolution (fidelity) was average with good interlacing quality. Brightness was fair. Sensitivity was very good and ample for fringe-area reception. Noise level as indicated by lack of "snow" in picture, good. Operation at reduced line voltage, poor. Quality of sound output, unusually good for a console receiver and limited only by the speaker used. Audio output was sufficiently good to warrant connection to a separate high-fidelity speaker system by a serviceman if desired, but distortion would be high by high-fidelity standards. Estimated acoustical range from 11-in. speaker, 60 to 8000 c.p.s. A separate UHF tuner is available but was not tested. ¶A similar chassis is used in *Models MV104L*, 21-in. table model at \$250; *MV111L*, *MV102L*, *MV107L*, and *MV108L* 21-in. console models at \$340 to \$400; and *MV95L* AM Radio-TV combination console at \$495.

Packard Bell, Model 2742 (Packard-Bell Co., Inc., Los Angeles) \$360.

Above average in most respects, an all-around good receiver.

The console model tested was equipped with chassis No. 2740 which does not provide for reception on UHF. 24 tubes plus 2 rectifiers and a 21-in. picture tube; picture mask size, 19 in. wide x 14 in. high. Cabinet was of wood, very good, heavy construction. Estimated monthly operating cost, 90c, average. There was no tendency for the picture to "flop" or "tear," and the picture was amply bright for daytime viewing. Interlace and picture fidelity were considered good. Sensitivity, or the inbuilt capability to receive stations acceptably in fringe areas, good. Noise level in picture indicated by amount of snow, desirably low. Operation at reduced line voltage, poor. Quality of sound output from 10-in. speaker, average. Estimated acoustical range, 60 to 6000 c.p.s. ¶Chassis No. 2740 is also used in 21-in.

console models 2842, 2843, and 2743 (\$400); in table models 2744 (\$300) and 2844; and in combination console models 2941 (\$525) and 3041. Models 2842, 2843, 2844, and 3041 have the VHF-UHF front-end tuner.

Sylvania, Model 377BU (Sylvania Electric Products, Inc., 254 Rano St., Buffalo) \$480.

The VHF section of this receiver was very well executed, very sensitive, and thus well suited for use in fringe areas. The separate continuous tuner for UHF reception with which the receiver tested was equipped cannot be recommended because of excessive radiation.

A console model with 23 tubes plus 4 rectifiers and 21-in. picture tube; picture mask size, 18.5 in. wide x 14 in. high. Cabinet of wood construction, judged well built. Estimated monthly operating cost, \$1.20, high. There was no tendency for the picture to "flop" or "tear," and brightness, interlace, and picture fidelity were considered good. Sensitivity was very good, one of best receivers in this respect so far tested. Noise level in picture, low. Quality of sound output from 10-in. speaker, average when compared with other console receivers. Estimated acoustical range, 80 to 5000 c.p.s. ¶The continuous tuner used for UHF, \$50 additional if separately purchased, was of satisfactory sensitivity on channels 19, 42, and 80. The amount of radiation generated in the tuner was excessive and likely to create interference problems in other receivers in the neighborhood. For this reason, purchase of the UHF tuner is not recommended. A selling feature of many Sylvania TV receivers—*Halolight*—with which the receiver tested was equipped is designed to relieve the sharp contrast in brightness between the TV screen and the surrounding room lighting. It was judged a useful and desirable feature. The picture tube face and safety glass front were tilted slightly to reduce reflections from room lighting—also desirable. ¶Sylvania 21-in. table model 375 (\$360) as well as 21-in. console models 372, 373, 376, and 377 (\$450 to \$680) are thought to use the same chassis.

B. Intermediate

Emerson, Model 740, Series D (Emerson Radio & Phono. Corp., 111 Eighth Ave., N.Y.C.) \$280.

While this is a good set in many respects, its picture quality was only average.

A table model with 20 tubes, 3 rectifiers, and 21-in. picture tube; picture mask size, 19 in. wide x 14 in. high. Cabinet of ¾-in. plywood construction, judged well built. Estimated monthly operating cost, 85c. The picture was quite steady with no tendency to "flop" or "tear"; brightness was good. Picture quality or fidelity was considered average; resolution, interlace, and noise level were average. Sensitivity on high band was good; on low band, below average. Set operated satisfactorily at reduced line voltages. Large amount of r.f. radiation from antenna. Quality of sound output from 6-in. speaker was judged average for a table-model TV receiver. Estimated

acoustical range, 125 to 6000 c.p.s. ¶Chassis No. 173D, used in the model tested, is also used in model 732, 21-in. table-model 765 (\$200), 21-in. console models 769, 771, 773 (\$370 to \$430), and 786.

RCA-Victor, Model 21-S355 (RCA-Victor Div., Radio Corp. of America, Camden, N.J.) \$250.

The picture as received was average in quality. Over-all operation considered somewhat below average.

18 tubes plus 3 rectifiers and 21-in. picture tube; picture mask size, 19 in. wide x 14 in. high. Cabinet was made of sheet metal with pleasing maroon finish. Estimated monthly operating cost, 95c, about average. The picture was quite steady and amply bright for daytime viewing. Interlace was good, but picture fidelity was considered below average. Sensitivity, average on high band, below average on low band. Noise in picture, low. Quality of sound output from speaker, which was of 4-in. diameter, was only average for a table model. Estimated acoustical range, 100 to 8000 c.p.s. Provision is made for use of a separate UHF tuner, but this was not tested. The Model 21S-355 was in RCA's "Special Series" which is believed to be their "competitive" line.

Westinghouse, Model 793K21 (Westinghouse Electric Corp., Television-Radio Div., Sunbury, Pa.) \$300.

The received picture was somewhat above average; the audio section had excessive distortion at the lower frequencies.

A console model with wood-framed "hardboard" cabinet; "mahogany" finish. 18 tubes plus 3 rectifiers, crystal detector, and 21-in. picture tube; picture mask size, 18.5 in. wide x 14 in. high. Picture tube was tilted, desirable. Estimated monthly operating cost, \$1.10. The picture as received was steady and of good fidelity with ample brightness and good interlace. Sensitivity was good as was operation during reduced line-voltage test. Quality of sound output from 10-in. speaker was only fair. Estimated acoustical range, 100 to 6000 c.p.s.; much distortion in evidence at lower frequencies. Provision was made for installation of a UHF tuner, but tuner was not tested. ¶A similar chassis is used in 21-in. table models H-770T21 (\$200), H-776T21 (\$260), H-771T21 (\$200), and in 21-in. console models H-772K21, H-773K21, H-774K21, and H-775K21 (\$250 to \$430).

Zenith, Model L2237R (Zenith Radio Corp., 6001 Dickens Ave., Chicago 39) \$310.

An average TV receiver in most respects.

The table model tested contained 16 tubes plus 2 rectifiers and 21-in. picture tube; picture mask size, 20 in. wide x 14 in. high. Cabinet was of thick plywood construction over a wood frame. Estimated monthly operating cost, 80c, lower than average. Picture fidelity and interlace were good with no tendency toward "flopping" or "tearing" noted. Brightness was satisfactory; sensitivity was ade-

quate. Noise level in picture, low. Quality of sound output, satisfactory. Estimated acoustical range, 150 to 6000 c.p.s. Operation at reduced line voltages was satisfactory. The picture tube used was of the aluminized screen type. While such a tube can offer excellent contrast and brightness if a sufficiently high voltage is available, it appeared to offer no significant advantage in the Zenith. ¶Chassis No. 19L27 Super K, used in the set tested, is also thought to be the same as chassis No. 19L25, 19L26, 19L28, 19L33, and 19L34 used in other Zenith receivers.

C. Not Recommended

Motorola, Model 21K13 (Motorola Inc., 4545 Augusta Blvd., Chicago 51) \$350.

Picture fidelity was below average, brightness was poor, and interlace was unstable. Sound was fair.

A console model with 16 tubes, 1 rectifier, 2 selenium rectifiers, and 21-in. picture tube; picture tube tilted, desirable; picture mask size, 18.8 in. wide x 13.8 in. high. Cabinet of wood construction, judged well built. Estimated monthly operating cost, 70c, below average. While there was no tendency for the picture to "flop" or "tear," brightness and interlace were poor, and low-voltage-operation was poor. Quality of sound output from 9½-in. speaker was below average with excessive low-frequency distortion. Estimated acoustical range, 175 to 5000 c.p.s. (Chassis was 300 volts a.c. above ground potential when set was operating, which is a definite shock hazard to anyone servicing the set.) ¶Chassis No. TS 502 was tested. Chassis No. TS 402 is thought to be similar except for a slight difference in the power-supply auto transformer. One of these chassis is used in 17-in. table models 17T15 (\$200), 17T16; in 17-in. console model 17K17 (\$280); in 21-in. table models 21T8 (\$250) and 21T11 (\$270); and in 21-in. console models 21C2, 21F5, 21K12, 21K13, 21K14, 21K15, 21K16, and 21K17 (\$300 to \$595).

Raytheon, Model C2108A (Raytheon Mfg. Co., Waltham 54, Mass.) \$350.

While this set was considered average in some respects, picture resolution was considered unsatisfactory, sensitivity was relatively poor, and excessive hum was present in the listening test.

A console model with 16 tubes, 1 rectifier, 2 selenium rectifiers, and 21-in. picture tube; picture mask size, 19 in. wide x 13.5 in. high. Cabinet of ¾-in. plywood construction, judged well built. Estimated monthly operating cost, 95c. Picture stability and brightness were satisfactory and interlace was good. Resolution or picture fidelity was judged comparatively unsatisfactory, and sensitivity was relatively poor. Adjacent channel signal rejection was also poor, and adjacent channel signals caused interference in picture. Quality of sound output from 9-in. speaker was below average. Low-frequency distortion was excessive, and a 120 c.p.s. hum was present

to an unsatisfactory degree. Estimated acoustical range, 100 to 5000 c.p.s. ¶A continuous tuner was available for UHF reception but was not tested. ¶Chassis 21T1 was used in the receiver tested and is thought to be used in all Raytheon receivers in the under-\$500 price range. Chassis 21T1A and 21T1B are similar.

• • •

For the convenience of subscribers interested in the purchase of a 1953 receiver, brief model listings follow of the 1953 sets tested by CR.

A. Recommended

Admiral 122 DX 12N; Capehart 4H212M; Crosley EU-

17TOM; DuMont RA-164-165 Beverly; Packard Bell 2710; Sylvania 175B.

B. Intermediate

Crosley EU-21TOL; Emerson 720 Series D; Hallicrafter 1057U; Hoffman 21M305B; Motorola 21K4; Muntz 2162A; Philco 53-T-2269; RCA 21T228; Raytheon M-2107A; Sylvania 120M; Zenith K-2270R.

C. Not Recommended

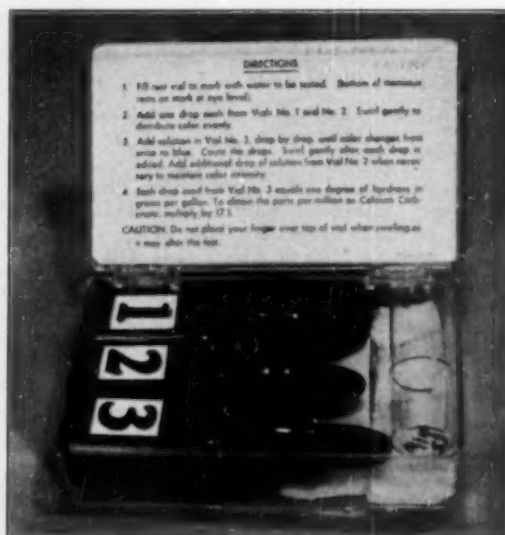
Silvertone (Sears-Roebuck's Cat. No. 57-2110A)

Hard Water Test Kit for the Layman

NATURAL WATERS vary in hardness from soft to extremely hard according to the source, whether ground or surface water, time of year, and other causes. Water which has a hardness under 3 grains per gallon as calcium carbonate (50 parts per million, approximately) is considered soft; 3 to 6 grains, moderately soft; 6 to 12 grains, moderately hard; 12 to 30 and over, hard to extremely hard. Many people would like to know how hard their water is and, no doubt, have considered having an analysis made for hardness, but because of the cost or inconvenience involved have never gotten around to doing so.

A handy test kit is now available for persons who wish to test the hardness of their water supply, at home, without the need of complicated equipment or special skill. The kit is designed especially for non-technical people, and with it the hardness of any water can be determined by color change in about one minute with ample accuracy for any household purpose.

The test kit, which is based on the Schwarzenbach method for determining hardness in water, consists of three bottles of solutions and a calibrated testing vial packed in a plastic box, as shown in the illustration. By following the simple instructions supplied, namely adding the solutions drop by drop to the water being checked until a change in color from pink to blue is seen, one can determine the hardness of the water in grains per gallon as calcium carbonate, which, if desired, can be converted to parts per million (by multiplying by 17). The kit, supplied with sufficient amount of solutions to test a quantity of water samples totaling about 150 grains per gallon (approx. 2500 parts per million), is manu-



factured by Lack Chemical Co., Inc., 19 Park Place, New York 7, and can be obtained from a chemical laboratory supply house, the Emil Greiner Co., 20-26 N. Moore St., New York 13, at \$2.95, plus postage. This kit would permit the user to check about 30 separate samples in regions where the water has a hardness of about 5 grains per gallon.

Small Radio Receivers

Table-Model Radios, Portable Radios, Clock Radios, Table-Model AM-FM Radio

Table-Model Radios

The popularity of table-model radios which decreased considerably in the last few years, largely due to the advent of television, is now on the upswing. A table-model radio receiver must evidently be considered a practical necessity in the home, for more than 3,000,000 were sold during the first half of the year, and indications are that sales are once again increasing. The radio receivers are doubtless chiefly used during the daytime hours when the homemaker is busy at her daily tasks and cannot conveniently give attention to a television program.

The table-model radio has changed little in the past few years, except for design of case and other details that make for appearance and novelty. The average set uses the equivalent of five tubes, has a modernistic plastic cabinet which may shatter if the set is accidentally dropped, and depends upon a small—usually 4-inch—loud-speaker for its sound output. The acoustical quality is poor, even in the better units, and the tonal range is quite limited—indeed, in some models hardly adequate even for good reproduction of speech. There are, however, distinct differences in the end results obtained by the many manufacturers who use much the same circuit arrangement in their receivers. Some sets are quite sensitive and are able to receive stations several hundred miles distant. Good sensitivity can be a disadvantage in many areas, however, particularly at night, since it may be a cause of interference between two stations broadcasting on or close to the same frequency and make acceptable reception of either station an impossibility. The AM broadcast band is so overcrowded that many stations have been assigned the same broadcast frequency. Interference between stations broadcasting on adjacent bands will normally be less if the re-

ceiver has good selectivity; yet very good selectivity carries a serious limitation on fidelity of reproduction. Nevertheless, since the AM broadcast band is so overcrowded and so very few AM station broadcasts even approach high-fidelity quality, good selectivity is to be preferred as the lesser evil in the smaller radios in almost all "crowded" radio areas.

When choosing a set, it will be worth while to listen to it for a period of time in the dealer's showroom. Some small receivers have an unpleasant quality which, although tolerated or not noticed during a very brief listening period, may become distinctly annoying when heard for a half hour or more. When trying the set, the volume level should be turned up as high as practicable. It is best, when possible, to make an agreement with the dealer permitting return of the set for exchange or refund if it is found not to be fully satisfactory with respect to sensitivity, selectivity, and tonal quality after trial, since these characteristics are not easily evaluated in the showroom, and performance depends in part on reception conditions in the particular place where the set is to be used. Remember, however, that poor reception on AM is often in no way the fault of the receiver. Static, atmospheric fading, interference, certain distortions of voice and music that occur at some times and not at others are often causes of unsatisfactory reception which may be the result of local conditions, weather, time of day, or other factors.

Each of the sets listed had a built-in antenna and, except for the *Sparton*, a plastic cabinet. Several used one or more "printed circuits," which are a relatively new development and tend to make for less congestion of parts under the chassis and therefore easier servicing. One set, the *Motorola* clock radio, used a "plated" chassis. Speaker sizes ranged from 3 inches in the *Emerson Pocket Portable* to 6 by 8 inches in the *Sparton*, with the 4-inch size predominant.

Unless otherwise noted, all models were listed by the Underwriters' Laboratories (UL).

B. Intermediate

Zenith, Model J615 (Zenith Radio Corp., Chicago)

\$36.95. Sensitivity, very good (t.r.f. stage). Relative selectivity, fair. Tonal quality judged very good for a table model, and best in that respect of table-model AM sets tested. Approximate acoustical range, 60 to 4000 c.p.s.; response was unusually smooth for a table-model radio, with very good low-frequency response, desirable. Power output at 400 cycles with 10% distortion, 0.7 watt, fair. Leakage current, 1.6 ma., considered excessive, but not dangerously so. 3

* * *

Capehart, Model T-522 (Capehart-Farnsworth Corp.,

Fort Wayne 1, Ind.) \$24.95. Sensitivity, fair. Relative selectivity, good. Tonal quality judged fairly good. Approximate acoustical range, 120 to 5000 c.p.s., good. Power output (volume), 0.4 watt, poor. Leakage current, 2 ma., indicative of an excessive but not dangerous degree of shock hazard. 1

Philco, Model B570 (Philco Corp., Philadelphia)

\$24.95. Sensitivity, good. Relative selectivity, good. Tonal quality judged fairly good. Approximate acoustical range, 120 to 3800 c.p.s., about average. Power output at 400 cycles with 10% distortion, 0.6 watt, fair. Leakage current, 4.2 ma., considered excessive. Not listed by UL. 1

RCA Victor, Model 1X53 (Radio Corp. of America,

RCA Victor Div., Camden, N.J.) \$25.95. Sensitivity, very good. Relative selectivity, fair. Tonal quality judged fairly good, but cabinet "rattles" were present at high volume level. Approximate acoustical range, 160 to 3300 c.p.s., somewhat less than average. Power output, 0.7 watt, fair. Leakage current, 3.6 ma., considered excessive. 1

Emerson, Model 729 (Emerson Radio & Phonograph

Corp., N.Y.C.) \$29.95. Sensitivity, good. Relative selectivity, good. Tonal quality judged fairly good. Approximate acoustical range, 70 to 4200 c.p.s., good, but response curve was relatively uneven (undesirable). Power output, 0.5 watt, fair. Leakage current, 3.8 ma., considered excessive. 2

General Electric, Model 423 (General Electric Co.,

Electronics Park, Syracuse) \$34.95. Sensitivity, good; tuned r.f. stage, desirable if good sensitivity is wanted. Relative selectivity, fair. Tonal quality judged good for a table model. Approximate acoustical range, 120 to 5300 c.p.s., good. Power output, 1.3 watts, good. Leakage current, 4.6 ma. (excessive shock hazard). 3

C. Not Recommended

Airline, No. 7E308 (Montgomery Ward's Cat. No.

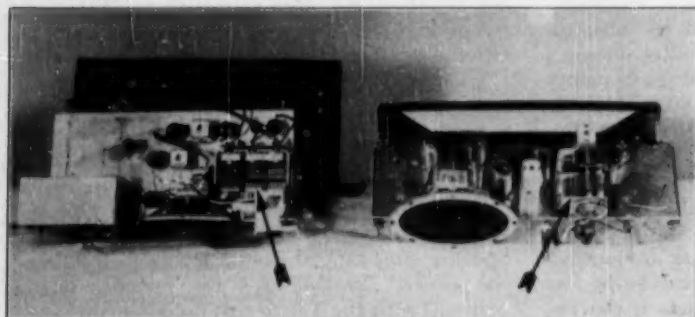
62-1555M) \$24.95, plus postage. Sensitivity, very good. Relative selectivity, good. Tonal quality judged only fair. Approximate acoustical range, 120 to 3600 c.p.s., about average. Power output, 0.6 watt, fair. Leakage current, 9 ma., considered excessive, and dangerous in regard to potential shock hazard. 1

Motorola, Model 53H3 (Motorola, Inc., 4545 Au-

gusta Blvd., Chicago 51) \$26.95. Sensitivity, good. Relative selectivity, good. Tonal quality judged good. Approximate acoustical range, 140 to 4800 c.p.s., good. Power output, 0.8 watt, fair. Leakage current, 6.0 ma., considered excessive, and dangerous in regard to potential shock hazard. 1

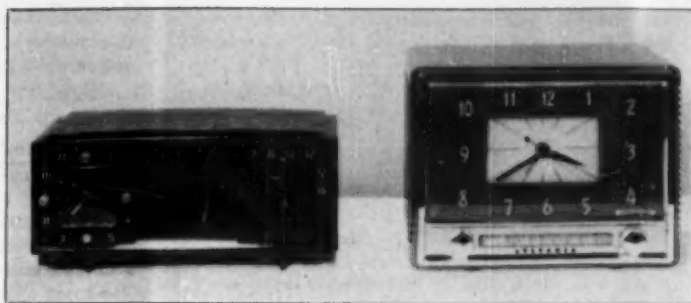
Clock Radios

The table-model radio with an electric clock built in is, in many homes, taking the place of the old-fashioned alarm clock with its sharp and oftentimes overloud and disturbing bell. The clock radio offers the advantage of a controlled volume level on the sound of the program chosen to wake the sleeper, and loudness can easily be adjusted to suit the owner's preference. In many of the latest models, switching arrangements are incorporated to turn on the electric coffee maker or other electrical appliance automatically when the radio comes on, and some even include a so-called slumber switch which turns off the radio after a preselected time interval for those who may choose to be lulled to sleep at night by their favorite music or news program.



A three-gang condenser, chassis on the left, is indicative of the presence of a tuned radio-frequency stage, which normally gives better sensitivity, and—if properly aligned—fewer spurious responses (interfering noises, whistles, etc.) and greater ability of the set to separate two stations broadcasting on adjacent channels. The mere presence of an r.f. stage, however, does not mean these advantages will be afforded, as is evidenced by the relatively poor performance of the Silvertone 02012.

Two table-model clock radios. The *Sylvania*, on the right, is a somewhat new approach in that it has a sizable clock face. It has the disadvantage, however, in that controls for the alarm and clock are at the rear of the cabinet.



The desirability of using a radio program as a "waker-upper" is something the prospective purchaser must decide for himself. Some hold that the volume level used for a bedtime program is inadequate to awaken the sleeper in the morning, particularly if it takes a loud call to wake him. Most clock radios also provide a buzzer alarm which can be set either to come on a few minutes after the radio or in some instances separately, without the radio.

One of the principal criticisms of some of the clock radios tested was with regard to the placement of the several controls used. While there is no particular need to have the time-setting knob control at the front of the cabinet, the alarm-set, slumber switch control, and off-on switch should be located at the front, for ease in setting and for checking without need to pick up the appliance (which requires two hands, for safety) and turn it over to make these adjustments.

There was an important omission in all the clock radios tested—namely, the lack of a "telltale" so that the user could see at a glance whether or not there had been an interruption of the electric service during sleeping hours. This feature, which is present on most electric alarm clocks, is a practical necessity, particularly in those sections of the country where interruptions of the electric service are fairly common.

In the listings following, unless otherwise noted, the clock mechanisms were considered to operate in a satisfactorily quiet manner, and clock faces had radium-luminous hands or dial or other provision for illumination.

Unless otherwise noted, all models were listed by the Underwriters' Laboratories.

B. Intermediate

Zenith, Model K518 (Zenith Radio Corp., Chicago) \$39.95. All clock controls are at front of cabinet (desirable), except time-set. Built-in buzzer may

be set to come on 6 to 7 min. after radio is automatically turned on, or the buzzer may be used as alarm without the radio coming on. Clock face was not difficult to read; hands were luminous. Sensitivity, fairly good. Selectivity, good. Tonal quality judged good for a clock radio. Approximate acoustical range, 160 to 5000 c.p.s., good. Power output at 400 cycles with 10% distortion, 1 watt, good. Leakage current, 1.8 ma., indicative of excessive but not dangerous degree of shock hazard. 2

• • •

Capehart, Model TC-101 (Capehart-Farnsworth Corp., Fort Wayne 1, Ind.) \$39.95. Sessions clock timer. Built-in buzzer alarm. All controls at front (desirable), except time-set. Time was easily read in bright and dim light, but could not be read in darkness. Sensitivity, good. Selectivity, good. Tonal quality, good at low volume level, but distortion was quite noticeable when sound was reasonably loud. Approximate acoustical range, 140 to 5500 c.p.s., good. Power output, 1.3 watts at 400 cycles at 20% distortion; distortion remained high down to the low output of 0.5 watt. Leakage current, 1.8 ma., indicative of excessive but not dangerous degree of shock hazard. 2

Emerson, Model 724B (Emerson Radio & Phonograph Corp., New York City) \$34.95. Telechron clock, with timed appliance outlet rated at 1100 watts. All alarm clock controls are at front, which is desirable. Built-in buzzer will come on, if desired, about 10 min. after radio is turned on. Radio can be switched out and clock used only to turn on a connected appliance, such as a coffee maker. "Sleep-setting," which turns off radio after one-hour interval for those who like to be "lulled to sleep." Clock hands are luminous, but not the numbers of the clock face. Sensitivity, relatively poor. Relative selectivity, fair. Tonal quality, below average. Approximate acoustical range, 130 to 3800 c.p.s., about average. Power output, 1.0 watt at 400 cycles at 10% distortion, good. Leakage current, 1.8 ma., considered excessive. Not listed by UL. 2

General Electric, Model 546 (General Electric Co., Electronics Park, Syracuse) \$39.95. Telechron timer. All controls at front except time-set, satisfactory. "Sleep-setting." Built-in buzzer alarm. Clock hands

only are luminous. Sensitivity, good. Selectivity, fair. Tonal quality judged good for a clock radio. Approximate acoustical range, 170 to 5000 c.p.s., good, but low-frequency response somewhat deficient. Power output, about 0.3 watt, poor. Leakage current, 2 ma., indicative of an excessive but not dangerous degree of shock hazard. **2**

Silvertone, No. 02012 (Sears, Roebuck & Co., Chicago) \$34.95, plus postage; \$37.95 in retail store. *Telechron* clock timer; timed outlet rated at 1100 watts. All controls except time-set are at front, desirable. Clock difficult to set accurately (jerky motion of hands). "Sleep-setting" provided. Buzzer alarm sounds 10 minutes after radio turns on. Sensitivity, good at low frequencies, poor at high frequencies; a tuned radio frequency stage was used. Selectivity, fair. Tonal quality judged average. Approximate acoustical range, 80 to 5600 c.p.s., considered good. Power output, 0.9 watt, fair. Leakage current, 1.4 ma., considered excessive. **2**

Sylvania, Model 543RE (Sylvania Electric Products Inc., Radio Television Div., Buffalo 7) \$47.95. *Sessions* clock timer; timed appliance outlet rated 1100 watts. All alarm clock controls are at rear of cabinet, which is not desirable. "Sleep-setting" could be set up to 95-min. interval. Control knobs are of screwed-on type, undesirable; some knobs came loose several times during the test. When control is set at "auto," the radio will come on once in each 12-hr. period and then will be turned off automatically after 2 hr. Clock panel is luminous, and brightness can be set at desired level. Sensitivity, relatively poor. Relative selectivity, good. Tonal quality judged average. Approximate acoustical range, 130

to 3800 c.p.s., average, and response is not smooth (undesirable). Power output, 1.0 watt, good. Leakage current, 1 ma. **3**

C. Not Recommended

Motorola, Model 53C4B (Motorola, Inc., Chicago) \$32.95. *Telechron* clock timer; timed appliance outlet rated 1100 watts. "On-Off-Auto" control in front, desirable. When control is set at "Auto," the rear of cabinet (not objectionable, as those controls are seldom used in normal operation). Neither clock hands nor clock face numbers are luminous. Sensitivity, good at 700 kc., fair at 1350 kc. Relative selectivity, good. Tonal quality judged below average. Approximate acoustical range, 120 to 3600 c.p.s., average, but response was only fairly smooth. Power output, 0.8 watt, fair. Leakage current, very high; dangerous degree of shock hazard present. **1**

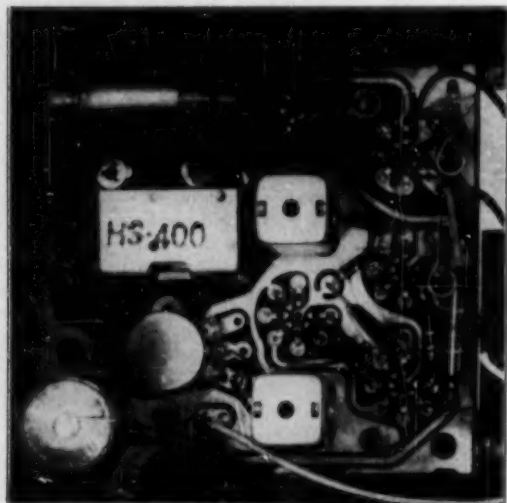
Philco, Model B710 (Philco Corp., Philadelphia) \$29.95. *Sessions* clock timer. All clock controls in front, desirable. When control is set at "Auto," the radio will come on once in each 12-hr. period and then will be turned off automatically after 1 hr. 40 min. Neither clock hands nor clock numbers are luminous. Sensitivity, good. Relative selectivity, good. Tonal quality judged below average. Approximate acoustical range, 120 to 4100 c.p.s., good; response unusually smooth for clock radio, desirable. Power output, 0.7 watt, fair. Leakage current, very high—dangerous degree of shock hazard present. Not listed by UL. **1**

Portable Radios

A three-way portable radio, unfortunately, exhibits many of the usual disadvantages of the usual table-model receiver, including limited quality of sound output and shock hazard, and in addition usually gives inferior sound quality and volume. Power output or loudness is necessarily low, because of the need to use tubes which operate on a minimum amount of current and therefore do not rapidly exhaust the batteries. Since a portable receiver is more likely to be used chiefly during daylight hours, good sensitivity is an important quality (unless the set is to be used only for local reception). The use of a tuned radio frequency stage, present only in the *RCA Victor PX-600*, usually indicated by a three-section condenser for tuning, is thus advantageous.

The trend in portable receivers seems to be in the direction of the small, lightweight units, typified by the *Philco* and the *Silvertone*.

The very small *Emerson Pocket Radio Model 747* which weighed slightly more than one pound and could be carried in a man's coat pocket is a possible forerunner of things to come as "miniaturizing" of circuits becomes further developed for use in consumer products (as it has long been



The "plated" circuit used in the Motorola clock radio is a cost-cutting and space-saving development relatively new in civilian applications. It is likely to be more widely applied in the future. It may, however, present problems for servicemen in repair of sets.

employed in certain military applications). With the wider application of printed circuits and the use of the extremely efficient transistors in place of vacuum tubes, both the size and weight of radios it is expected may be reduced substantially—after a considerable period of experimentation and development. The *Emerson 747* was sadly lacking in volume of output, and its sensitivity was barely more than sufficient to provide reception on local stations. At CR's laboratory, located about 50 miles from New York's powerful broadcasting stations, most stations were so weak that it was necessary to hold the set close to the ear to understand the announcer's words. In addition, possibly due in part to the small loud-speaker used, the tonal range was relatively narrow and distortion in the output was unusually high at the lower frequencies.

Small tubeless radios are now being widely advertised. These are dependent entirely on the power inherent in the signal from the broadcasting station, without amplification, for their volume of output. They are little more than toys and are of very limited application unless one is quite close, say about three to five miles, to a broadcast station.

Although portable receivers have been extensively advertised for use in automobiles, airplanes, etc., it is CR's opinion, confirmed by observation, that most portable receiving sets are poorly adapted to such use. Even the best portable would be a poor substitute for a good automobile radio, because of inadequate shielding and very low volume of output that would not satisfactorily override the noises of the car and the wind noises associated with rapid travel.

Never allow run-down batteries to remain in a portable receiver. If the set is to be stored or is not likely to be used for a period of time, the batteries should be taken out and put away in a cool, dry place.

Unless otherwise noted, all models were listed by the Underwriters' Laboratories.

B. Intermediate

Philco, Model 53-652 (Philco Corp., Philadelphia) \$47.50, less battery. Weight, 6.3 lb. Sensitivity, good. Relative selectivity, fair. Tonal quality judged fairly good for a portable. Approximate acoustical range, 200 to 2800 c.p.s., inadequate. Power output, 0.12 watt, about average for a portable model. Leakage current, 4.0 ma., considered indicative of an excessive but not dangerous degree of shock hazard. 3

RCA Victor, Model PX-600 (Radio Corp. of America, RCA Victor Div., Camden, N.J.) \$39.50, less batteries. Weight, 9.4 lb. Sensitivity, very good at 700 kc., fair at 1400 kc. Relative selectivity, fair. Tonal



Note the relatively small size of the Emerson Pocket Radio as compared with an average-sized portable.

quality judged good for a portable. Approximate acoustical range, 160 to 5000 c.p.s., good. Power output, 0.13 watt. Leakage current, 3.6 ma. (see comment on *Philco 53-652*). 3

Emerson Pocket Radio, Model 747 (Emerson Radio & Phonograph Co., New York City) \$40, including batteries. A midget portable receiver measuring 6½ in. long, 3½ in. high, and 1½ in. deep, and weighing only 1.4 lb. Used a single C size dry cell as "A" battery, and a small 45-volt "B" battery (battery replacement cost, about \$2.15). "A" battery lasted about 4 hr., and volume decreased considerably during first half hour after new "A" battery was put into use; both batteries are easily replaced by user. Sensitivity, relatively poor, and sound output very low; set would produce a useful output volume only when used relatively near—say 10-20 miles or less—to the average broadcast station; high-powered stations would often be received at somewhat greater distances. Acoustical balance considered fairly good, but useful frequency range of sound output was very limited, only 240 to 3100 c.p.s., and tonal distortion was high, particularly at the low frequencies. The price is considered high for the performance provided. No shock hazard. Not listed by UL. 3

C. Not Recommended

Silvertone (Sears-Roebuck's Cat. No. 2215) \$29.95, plus postage; batteries, \$3.61 extra. Weight, 5.5 lb. Sensitivity, poor at 700 kc., good at 1400 kc. Relative selectivity, good. Tonal quality, judged fair. Approximate acoustical range, 170 to 2600 c.p.s., poor, and response was not smooth. Power output, 0.07 watt, low. Leakage current, high—set considered relatively dangerous from point of view of shock hazard. 2

Table-Model AM-FM Radio

B. Intermediate (Tentative)

Sparton, Model 380 (Sparton Radio-Television

Div., Sparks-Withington Co., Jackson, Mich.) \$80. A table-model AM-FM radio with a well constructed plywood cabinet. Sensitivity, fair on AM; judged good on FM. Selectivity, good on AM. Tonal quality judged very good for a table-model receiver; acoustical response from 6 x 8 in. oval speaker was

smooth and extended from 60 to 6500 c.p.s. Background noise markedly reduced with use of outside antenna on AM. Power output at 400 cycles with 10% distortion, 2.1 watts, outstandingly good. Leakage current, negligible. 3

Brush Plating

MANY chemical housewares being featured nowadays in department store merchandising are "new editions" of items that have been on the market for years. Typical among these are the brush plating kits manufactured by J.N.T. Mfg. Co., Inc., New York 18, under the name of *Silv-R-Cote* for silver plating "worn spots on teaspoons, knives, and holloware," and *Met-L-Cote* for replating "faucets, auto trim, appliances, instruments and other chrome, nickel or similarly plated articles." The kit, which sells for \$3.95, includes a 2-oz. jar of electroplating solution and the *Appl-I-Coter* for applying the plating. The *Appl-I-Coter* consists of a brush and a connecting wire and clip for connecting the brush to a battery of two of the small "penlight" dry cells. Mounted within the bristles of the brush is the anode (positive electrical terminal) of the metal to be plated.

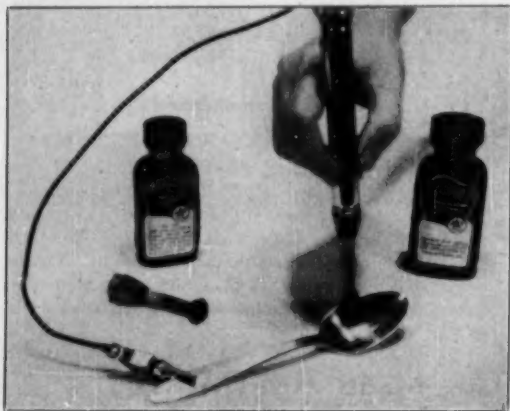
Electroplating involves the application of adherent metal coatings to improve the appearance and resistance to corrosion of articles, usually of metal, and commercial electroplating usually applies a coat of substantial thickness. The thickness of plated coatings is the important fac-

tor in determining their corrosion resistance. Numerous everyday uses of corrosion-resistant plates are seen on automobiles, electrical and household appliances, and tableware. While these kits are intended for touching up worn spots on plated articles, and it is technically possible by following directions to apply a plate with a device of the sort described, sold for home use, it is not easy to get an even, well-finished coating, and the coating will usually not be a satisfactory one—because of its extreme thinness. The coating of protective metal produced by practically any makeshift or amateur plating equipment is so thin that it will exhibit little resistance to wear, and it is hard to imagine any circumstances in which the method would be even a fair substitute for actual plating say of a bumper or faucet by the methods used in commercial electroplating plants.

The process of using either of these two kits was found to be unsatisfactory, time-consuming, and relatively expensive. In one instance, *Silv-R-Cote* was applied continuously for 15 minutes to the back of a silver-plated teaspoon from which the plating was worn. The finished job left much to be desired, for what little coating of silver was applied was dull and would require buffing; moreover, it could be removed with brisk rubbing of a cloth. Attempts to cover scratches with *Met-L-Cote* on a chrome-plated automobile bumper proved quite useless.

There is likely to be some staining of adjacent woodwork or fixtures, where there are such, from the plating solutions, unless the part to be plated is one that can be conveniently removed from adjacent materials. Then, if it must be removed, it will likely be much better to send it to a job plating shop for a thick coating of plate correctly applied.

The consumer should bare in mind that there may be difficulty in reordering solutions and parts in the future should the mail-order firm or other company offering a home plating kit go out of business or decide to discontinue handling a particular item.



Shown above are the two J.N.T. electroplating solutions and the respective brush sections which can be used interchangeably on the holder for the two small dry cells.

Men's Jackets

WITH the current trend toward casual or sportswear, at least one lightweight jacket will be found in many a man's wardrobe. Army studies have shown that light wind-resistant garments lined for warmth gave good protection against the cold and were comfortable and practical. "Shell jackets," as the trade calls garments of this kind, now enjoy the largest sale in the men's outerwear field. The favorite outer fabric for these jackets is one of the various blends of rayon, acetate, and nylon. The popular lining is a quilted one.

The use to which the jacket will be put is the deciding factor in making a selection. A jacket that is warm enough for one person in one climate will be unsuitable for another. There is a general rule for determining the warmth of a lining material that can be applied rather easily. In textile materials there is a close relationship between thickness and warmth-retaining properties, and roughly the thicker a textile material the warmer it is likely to be. Studies made at the University of Arkansas by Professor M. E. Barker, head of the chemical engineering department, showed that the insulation value of cloth fabrics made of cotton, wool, rayon or one of the other man-made fibers will be about equal, provided the density, thickness, color, and weave structure are the same. Professor Barker concluded that for comfort on a cold, windy day a man should wear dry clothing in comparatively thick layers; a coat should have the wrist and neck openings closed, and the outer "wind-breaker" layer should be of closely woven cloth having a smooth surface. Studies in this field have indicated that in general all lining fabrics are warm enough when used in conjunction with tightly woven outer fabrics which prevent the penetration of wind. The thicker the materials, of course, the more bulky the jacket, and many men who live where the winter climate is fairly mild will decide in favor of a lighter and less cumbersome garment, even if it is not so warm as a heavy, bulky jacket.

The consumer will be wise to purchase winter garments carefully to be sure that they are not too tight. Tight-fitting clothing will be uncomfortable, and will actually be less warm, since it allows little room for the air to be trapped between layers of clothing. The air pockets in clothing are important to help insulate the body from cold.



Hang tags from three of the jackets tested.

The chief factor in determining the degree of satisfactory service to be obtained from a jacket is the quality of the fabric used in the "shell." Lack of knowledge or experience on the part of finishers and manufacturers is sometimes responsible for their poor choice of fabrics. Sometimes price is a factor, for a manufacturer may use an unsuitable fabric that costs less than one that is properly finished in order to be in a position to sell his garment at a low price. A fabric that is too light in weight originally may be filled up with resins and starches to give it a satisfactory "hand" and appearance. Finishing chemicals applied in too great quantities, however, tend to weaken and damage the cloth, and may be lost or deteriorated in dry cleaning or washing. For good service, a fabric should be woven to have adequate strength and weight and be treated in the finishing process with compounds to give it crease resistance and spot resistance. Outerwear is also treated to control shrinkage and to make it water repellent.

The better manufacturers of outerwear and sportswear are well aware that some of the fabrics which have proved unsatisfactory were either improperly constructed or improperly finished, and they have, since 1952, supported a plan to acquaint the industry with the tests and require-

ments which will insure the consumer's getting a fabric that is suitable for his use. Under this plan fabrics are submitted to a testing laboratory and tested for specific end use. This laboratory tests fabrics to determine if they meet certain minimum requirements for abrasion resistance, colorfastness to atmospheric fading and sunlight, crease resistance, and resistance to pilling. Tests may also be made on the durability of the water repellent treatment. It is unfortunate that the valuable information developed by the testing laboratory's work is not passed on to the consumer in some effective way on the labels and hang tags of the garments. The American Standards Association, which pioneered in setting standards for rayon fabric, has suggested the use of garment tags which give basic fabric information of value to the consumer. Few of the jackets which CR bought for test, however, carried labels that would help the average purchaser in determining whether the fabric would be suitable for the use to which it would be put. The labels commonly gave a statement of the fiber content, and the name of the water-repellent treatment, but even this information was sometimes missing. The Sears' jacket, for example, was advertised in the catalog as being water repellent, but no statement about the treatment was present on any tag or label attached to the jacket itself.

On this page there is reproduced a test report on a fabric used in one of the jackets in this study. It is a sample of the kind of report which is supplied to mills, converters, and garment manufacturers, and is sometimes used by the salesmen working for mills and converters to sell their fabric or services to garment manufacturers. There is nothing in it that is so complex that it would not be useful to consumers if the manufacturers could be persuaded to give it to them. It was information of this kind that was used by Consumers' Research in evaluating the fabrics used in jackets in this study.

In evaluating the jacket fabrics in CR's test, abrasion resistance was considered the most important factor, since abrasion damage is the cause of the greatest number of consumer complaints. All the fabrics showed serviceable abrasion resistance with one exception, the fabric used in the *Buck Skein Joe* jacket. The fabric in the *Berkray* jacket had the next to the lowest abrasion resistance. The fabric in the *Sport Chief* jacket was best in resistance to abrasion. All the fabrics showed good crease resistance except the fabric used in the *Hercules* jacket, which was only fair.

Only two of the fabrics had satisfactory colorfastness to light, when judged by the American Standard for Men's and Boys' Outerwear Fabric; those were *Buck Skein Joe* and *Berkray*. All the others had only fair or relatively poor colorfastness. This is a factor that might be or might not be important, depending on the extent to which the jacket would be exposed to sunlight.

A word about water-repellent treatments: there are generally two different kinds—renewable and durable—but the exact terminology used will depend on the manufacturer of the repellent. For the consumer, the difference is that a durable repellent should withstand repeated launderings and dry cleanings. A renewable repellent will be removed in laundering and dry cleaning, and the garment will have to be

Test Report—Fabric A

Tests	Results	Comments
Resistance to Abrasive Wear (Stoll Tester)	Warp direction, fabric did not break at 3000 strokes Filling direction, fabric did not break at 3000 strokes	good
Pilling Resistance	No surface change	good
Crease Resistance (Tootal Broadhurst Lee Crease-ometer)	3.6 cms. (warp) 3.6 cms. (filling)	good
Water Repellency (spray test)	80 (initial—tolerance 80) 70 (after 3 dry cleanings—tolerance 70)	satisfactory
Colorfastness to Gas Fading (American Assoc. of Textile Chemists and Colorists Method—one cycle)	No color change	good
Colorfastness to Light	Color change in 40 hr.	fair

retreated after each cleaning. A fabric which has been given a water-repellent finish is commonly evaluated by a spray test in which a piece of the fabric is sprayed with a given amount of water under specified conditions. It can be used to predict the probable water repellency of the treated fabric under conditions of rain and snow.

All the jackets in CR's test were of the kind called "surcoats," which are longer than waist length. Each had a zipper front closing and two slash pockets or two-way saddle pockets with flaps. The pockets on most of the jackets were lined or partly lined with cotton flannel—the *Field & Stream*, *McGregor*, and *Town & Country* jackets were the exceptions. All jackets but the *Berkray* had adjustable buttoned tabs on the sleeves, or knitted inner wristlets, but they differed in the kind of waist adjustment—some had none, some had elastic inserts, others had zipper, clasp, tab-with-buttons, or friction-buckle arrangements. All the jackets except the *McGregor* and the *Buck Skein Joe* had underarm perspiration guards (judged desirable). The inner linings of all the jackets were quilted, but differed markedly in abrasion resistance, closeness of quilting, and interlining fabric (this was usually cheesecloth). The lining of the *Stratojac* was not fastened flat beneath the bottom hem of the outer fabric, as in the other jackets, but had an extra fold of lining fabric stitched at the bottom; it is believed this should make the garment more comfortable to wear.

A. Recommended

Bantamac, Dunbar Pine (Marcus Breier Sons, Inc., New York 10) \$22.50. Green nylon, rayon, and acetate gabardine. Resistance to abrasion, pilling, and creasing, good; colorfastness to light, fair; to gas fading, good (no color change). Water repellency, satisfactory before and after dry cleaning. Had lining with good resistance to abrasion, cellulose batting, and medium-count cheesecloth interlining. Seam strength, good. Workmanship, fair; construction details, good. 2

Field & Stream (Gordon & Ferguson, Inc., St. Paul 1) \$25. Dark blue rayon, acetate, and nylon gabardine. Resistance to abrasion, pilling, and creasing, good; colorfastness to light, fair; to gas fading, good; water repellency, good before and after dry cleaning. Had lining with good resistance to abrasion, wool batting, and high-count cheesecloth interlining. Seam strength, good; workmanship, judged good; construction details, fair. 2

McGregor, Raleigh (David D. Doniger & Co., Inc., New York 16) \$25. Green rayon and nylon gabardine. Resistance to abrasion and creasing, good; to pilling, fair (satisfactory, but slight surface roughening and pilling); colorfastness to light, fair; to gas fading, satisfactory (slight color change). Water repellency, good before and after dry cleaning. Had lining with fair resistance to abrasion, *Jen-Cel-Lite* wool and acetate batting, and heavy muslin interlining. Seam strengths were very good. Overall workmanship, judged good; construction details, fair. 2

Town & Country (Guiterman Bros., Inc., St. Paul 1) \$25. Dark blue rayon, acetate, and nylon gabardine. Resistance to abrasion, pilling, and creasing, good; colorfastness to light, fair; to gas fading, good. Water repellency, good before and after dry cleaning. Had lining with good resistance to abrasion, wool batting, and high-count cheesecloth interlining. Seam strength, very good. Workmanship, judged good; construction, fair. 2

Stratojac (Winer Mfg. Co., Hammond, Ind.) \$32.50. Light blue rayon, acetate, and nylon gabardine. Resistance to abrasion and creasing, good; to pilling, fairly good (slight surface roughening); colorfastness to light, fair. Water repellency, good before and after dry cleaning. Had lining with good resistance to abrasion, nylon and dynel batting, and high-count cheesecloth interlining. Seam strength, very good. Workmanship and construction, good. 3

B. Intermediate

Hercules (Sears-Roebuck's Cat. No. 6815) \$13.85, plus postage. Green rayon and nylon gabardine. Resistance to abrasion and pilling, good; resistance to creasing, fair; colorfastness to light, relatively poor; to gas fading, satisfactory (slight color change). Water repellency, satisfactory before and after dry cleaning. Had lining with relatively poor resistance to abrasion, nylon batting, and medium-count cheesecloth interlining. Seam strength, satisfactory. Workmanship, fair; construction, good. 1

Sport Chief, Style 9111 (Chief Apparel, Inc., New York 1) \$14.95. Green rayon, acetate, and nylon gabardine. Resistance to abrasion, very good; to pilling, fair (satisfactory but slight surface roughening, slight pilling); to creasing, good; colorfastness to light, fair; to gas fading, good. Water repellency, satisfactory before and after dry cleaning. Had lining with relatively poor resistance to abrasion, reprocessed wool batting, and medium-count cheesecloth interlining. Seam strength, good. Workmanship, fair; construction, good. 1

Windward (Montgomery Ward's Cat. No. 7063) \$13.98, plus postage. Green acetate, rayon, and nylon gabardine. Resistance to abrasion, pilling, and creasing were good; colorfastness to light was

relatively poor; to gas fading satisfactory (slight color change). Water repellency was good before and after dry cleaning. Had lining with relatively poor resistance to abrasion, reprocessed wool batting, and low-count woven cheesecloth interlining. Strength of side and shoulder seams was good. Workmanship and construction details judged good. 1

C. Not Recommended

Berkray, Polar Gab (Berkray Corp., 230 Fifth Ave., N.Y.C.) \$14.95. Green rayon, acetate, and nylon gabardine. Resistance to abrasion, relatively poor; to creasing, good; to pilling, fairly good (slight change); colorfastness to light, good; to gas fading, satisfac-

tory (slight color change). Water repellency, good before and after dry cleaning. Had lining with relatively poor resistance to abrasion, reprocessed wool batting, and medium-count cheesecloth interlining. Seam strength, satisfactory. Workmanship and construction, judged fair. 1

Buck Skeln Joe, Lineman (Lustberg, Nast, & Co., Inc., 212 Fifth Ave., N.Y.C.) \$16.95. Blue acetate and rayon gabardine. Resistance to abrasion, relatively poor; to creasing, good. Colorfastness to light and to gas fading, good. Had lining with relatively poor resistance to abrasion, 100% wool batting, and low-count woven cheesecloth interlining. Seam strength, satisfactory. Workmanship, good; construction details, relatively poor. 1

Off the Editor's Chest

(Continued from page 2)

been deluged with gifts at Christmas time have adopted the habit of abstracting a number of toys from the pile under the Christmas tree and putting them away to be brought out later in the year when they will be more appreciated and when the other Christmas gifts have been worn out or broken. For parents who take seriously the problem of making an effective selection, here are a few suggestions:

- » Select a toy that is suitable for the child's age, and not too complex.
- » Avoid toys that simply entertain or amuse. Toys that require a child's participation in their use will help develop resourcefulness.
- » Look for sturdiness, durability, and safety in the toys you buy, for a favorite toy that breaks or wears out quickly is a great disappointment, and tends to give the child a wrong attitude toward the value of things which he will own and use in future years. Miniature electrical appliances should be so made as to be permanently free from shock hazard, and of course should really work.
- » Don't forget to include a well-illustrated volume of some children's classic and a game that can be played by all members of the family such as checkers, dominoes, croquinoles, flinch, or ring toss.

For children up to three years of age, it is never necessary to spend much money on elaborate toys. They play quite happily with crude homemade objects. One charming boy (now grown to football age) who was always well supplied with toys in his youth, preferred at the age

of two to abandon them all for an opportunity to get into his mother's pan cupboard and extract a bowl and egg beater. This he called his "wound and wound" and the combination would keep him occupied for a considerable length of time. Second in entertaining power was a teaspoon dropped into a clean milk bottle, which would jingle delightfully when shaken.

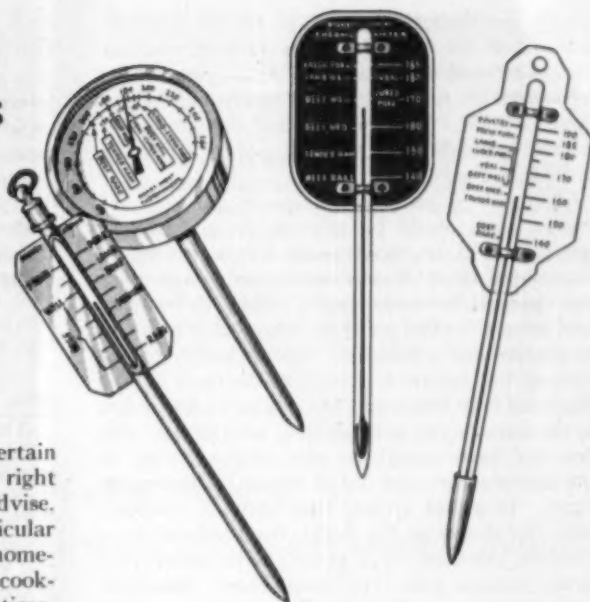
It is lots of fun for an adult Christmas shopper to select a new and alluring toy that he or she would have been delighted to find under the Christmas tree at an earlier age. But the wise selection of toys, and the number particularly, is a real responsibility of the parents and should not be just an amusing shopping adventure. Careful checking with a child's parents first is in order for loving aunts, uncles, and friends. For those who enjoy shopping for Christmas toys and have the money to spend, there are always worthy causes and organizations that are glad to receive gifts for less fortunate children.

Remember that the more effectively a child's play materials stimulate and develop his resourcefulness, alertness, intelligence, interest in nature and its laws, and general ability to handle and manipulate things, the more certainly he will be prepared to cope with the problems of the grown-ups' world when he is obliged to deal with them as an adult. The judicious selection of childhood playthings may well play a great part in the subsequent development of a well-balanced, well-poised, resourceful man or woman. The indulgent aunt or uncle may serve a child's best interest by keeping the gay, overcomplex or fragile novelty on her or his mantelpiece or by donating it to a favorite charity.

Meat Thermometers

How to Tell When

a Roast is Done



USE a meat thermometer to make certain that your roast is done to just the right degree that your family likes, the experts advise. It is important, however, that the particular thermometer purchased be accurate, or the home-maker will be just as well off to gauge the cooking time in hours and minutes in the time-honored fashion. Keep in mind, also, that the meat thermometer is not a substitute for an oven thermometer (or oven thermostat, on a modern electric or gas range), but only a helpful adjunct to it. Both are really necessary for securing uniform results in roasting.

The desirability of using a meat thermometer to determine just when to take a roast from the oven has been established by studies made by the National Live Stock and Meat Board and other experts who have demonstrated that meat roasted at a low temperature (no higher than 325°F) over a longer period of time is tenderer, juicier, more flavorful, and more uniformly cooked than meat roasted quickly at high temperatures. (Important, too, in these days of high prices, is the fact that the lower roasting temperature also reduces the amount of loss or shrinkage of the weight of the meat.) Even though the experienced cook can control the oven temperature and can roughly gauge the time required for the size of the roast she places in the oven, she cannot tell to what degree the meat has been "ripened," nor judge exactly the composition of the roast with respect to bone, lean, and fat. All of these factors, according to the experts, need to be taken into consideration in determining the length of time required for proper cooking. Particularly for frozen meat that is put into the oven to roast without being thawed, a meat thermometer is helpful in achieving the degree of "doneness" that the family prefers. It should be noted also that even where electric and gas ovens have temperature con-

trols, these are often inaccurate and in need of being calibrated, and therefore it is not always possible to roast correctly on the basis of cooking time, without a meat thermometer. When used in frozen meat, the thermometer is inserted after the meat has entirely thawed, according to directions on one thermometer.

During the past year, reports have appeared in the public press that trichinosis, a serious disease that is incurred from eating infected pork, is occurring with disturbing frequency. The trichinae parasites can only be killed by thorough and careful cooking. It is essential therefore that all fresh pork be cooked until the temperature of the innermost part reaches a full 185°F. Obviously only the use of an accurate meat thermometer will provide this information. Hams and cured cuts such as shanks and picnics need only register 160-170°F on a meat thermometer to be safely done.

There are two types of meat thermometers on the market, but they are both used in essentially the same manner. The National Live Stock and Meat Board recommends that the thermometer be inserted into the roast so that the bulb reaches the center of the largest muscle. It should not touch bone or fat. In roasting a large chicken or turkey, the thermometer may be inserted into a part where there is sufficient meat to imbed the tip such as the center of the inside thigh

muscle, or through the center of the stuffing. Several of the manufacturers furnish cooking directions, and all include the temperature to be registered on the meat thermometer when the meat is done. Most were found to agree with the recommendations of the National Live Stock and Meat Board.

Obviously a meat thermometer must be accurate, and should be of such design that its accuracy will be maintained for many years. To depend on it, if it is inaccurate, for gauging the moment for removing a rolled rib roast of beef from the oven for those who like it rare will be a snare and a delusion. One unhappy experience of this nature will tend to discredit all the National Live Stock and Meat Board's researches in the eyes of the unsuspecting homemaker who does not know about the possibilities of error in the manufacture and use of household thermometers. It would appear that there is considerable likelihood of her being disappointed in a random purchase of a meat thermometer. Of seven makes tested by Consumers' Research, only two gave sufficiently good performance to warrant an *A-Recommended* rating. Neither was of the type having a dial on a sharply pointed stem of stainless steel to facilitate inserting in the meat, that seems to be quite popular now—no doubt because it seems relatively immune to the danger of breakage in handling and use, and because the type is easily and quickly read. The dial thermometers may be rendered inaccurate by being dropped or otherwise abused, and they cost about 70 percent more than the old-fashioned glass stem thermometers.

The Cooper Thermometer Co., makers of a dial meat thermometer, have pointed out that their particular instrument is made with a small breather hole in the thermometer case to prevent any possibility of explosion when in use—which is no doubt a sound precaution. They caution against putting the thermometer in water after use because water will enter the case, and the instrument may be injured thereby. In cleaning such a thermometer, it need only be wiped off with a damp cloth.

In testing the meat thermometers, they were subjected to examination for design and construction including irregularities in the bore (for liquid-in-glass type), relation of the bore enlargement to the top of the scale, means of affixing the stem to the temperature scale, ease of reading, and quality of materials and workmanship. Tests for accuracy were run in a thermostatically-regulated laboratory oven heated to 300-330°, with the bulbs immersed in oil (at a controlled temperature) circulated by a small motor-driven propeller, and comparisons

were made of the thermometers being tested with a National Bureau of Standards calibrated mercurial thermometer. Oven temperature was determined by both a Bureau-calibrated mercurial thermometer and a thermocouple (iron-constantan). The factor given the greatest weight in the ratings was the accuracy of the thermometers in reading six temperatures, 140°, 150°, 160°, 170°, 180°, and 185°.

Directions for use accompanied all but one of the thermometers. Ratings are cr53.¹

A. Recommended

Ohio Hi-Lo Tested Roast Meat Thermometer

(The Ohio Thermometer Co., Springfield, Ohio) 69c. Fairly well made liquid-in-glass thermometer. The stem is securely fastened to the scale, but it is not protected against breakage as on the *Weksler 243*. The glass at the bulb end of the stem tapers to a point, and a 5-in. skewer is supplied to facilitate insertion of the thermometer into the meat. Easy to read. Accuracy, good. Average errors, -3° at 140° and +1° at 180°.

Taylor Roast Meat Thermometer, No. 5936

(Taylor Instrument Companies, Rochester, N.Y.) \$2; samples purchased at \$3.15 and \$1.85. A well made liquid-in-glass thermometer. The stem is securely fastened to the temperature scale and the bulb is protected by a cemented-on metal cap. The metal cap is tapered to a point, and a 6-in. skewer is also supplied to facilitate insertion of the thermometer in the meat. Easy to read. Accuracy, good. Average errors, -1° at 140° and +2° at 180°.

C. Not Recommended

Chaney Tru-Temp Roast Meat Testing Thermometer, No. 291

(The Chaney Mfg. Co., Inc., Springfield, Ill.; sold by a Sears-Roebuck retail store) \$1. Liquid-in-glass thermometer. Stem is securely fastened to the scale, but is not protected against breakage. The glass at the bulb end of the stem is tapered, and a 5-in. skewer is supplied to facilitate insertion of the thermometer. Accuracy, poor, with average errors of +8° at 140° and +16° at 180°. This would tend to favor undercooking, especially undesirable with respect to pork. Manufacturer's name was on the package but did not appear, as it should, on the thermometer itself.

Cooper Roast Meat Thermometer

(Cooper Thermometer Co., Paquabuck, Conn.) \$2.50. Bimetallic type, with dial and pointer. Stem is pointed for insertion into the meat. "Do not put in water" printed in red letters on dial. Easy to read. Accuracy, rather poor. Errors variable, but some averages were +5° at 140° and +7° at 180°.

Taylor Roast Meat Thermometer, No. 5939

(Taylor Instrument Co.; Montgomery Ward's Cat. No.

86-1115; Sears-Roebuck's Cat. No. 4-6590) \$3.19, plus postage. Bimetallic type, with dial and pointer. Stem is sharply pointed to facilitate insertion into the meat. Has a movable pointer which is pre-set to the desired temperature so as to make reading of the moving temperature-indicating pointer easier under oven conditions. Accuracy, poor; average errors, -12° at 140° and -12° at 180° .

Tel-Tru Roast Meat Thermometer (Germanow-Simon Co., Rochester, N.Y.) \$3. Bimetallic type with dial and pointer. Stem is sharply pointed to facilitate insertion into the meat. Easy to read. Accuracy, variable; good on some runs, poor on others. Errors ranged from -2° to $+10^{\circ}$ at 140° and 0 to $+10^{\circ}$ at 180° .

Weksler Roast Meter Thermometer, No. 243

(Weksler Thermometer Corp., 49 W. 32 St., New York City) \$1.95. Liquid-in-glass thermometer "armored" by being enclosed in an aluminum alloy case, sharply pointed at the lower end, to protect the stem. The temperature scale was removable, but the means for replacing it in the same position was not satisfactory. Hence an error of about 2° in its placement was possible. As the temperature scale is not rigidly attached, it could become displaced so as to cause error. Scale not graduated in degrees of temperature (as would be desirable)—but showed marks for doneness of various kinds of meat (rare, medium, well done). Errors variable, and large, with a range of over 10° at both ends of the scale.

Corrections and Emendations to Consumers' Research

Annual Cumulative Bulletin (ACB) and Monthly Bulletins

Combination
Storm Sash and
Screen Windows
Page 182
ACB '53-'54

Delete listing of *Rusco*. The manufacturer has advised CR that the design has been changed. Consumers' Research has not yet checked the new design.

Storage Batteries
Page 14
Mar. '53 Bulletin

Following publication of CR's report on "Storage Batteries" in the March 1953 issue, one large distributor, Sears, Roebuck & Co., wrote and indicated that they had reason to believe that the Sears' *Allstate Cross Country No. 46* batteries CR had tested and found below specification were not representative of the batteries Sears normally supplies. The automobile batteries CR tested had been purchased from a Sears' retail store and there was no reason to believe at the time of publication of the report that they would not be representative samples. Subsequent identification by Sears, Roebuck & Co. based upon private code markings on the batteries indicated that they were produced in a factory which had supplied only a small percentage of Sears' annual battery requirements. Mail-order houses often use several sources of supply in order to be in a position at all times to maintain the supply of items which are in very wide sale.

It was therefore agreed that additional samples would be obtained on the open market and subjected to test by an independent laboratory (since CR was not then carrying on tests of automobile storage batteries). The special tests have now been completed and the report re-

ceived. The findings justify a change in CR's rating of the Sears' *Allstate Cross Country No. 46* battery from *C. Not Recommended* to *B. Intermediate*. Each of the five samples included in the new tests had an indicated capacity of 100 ampere-hours or more at the 5-ampere discharge rate, and only one of the five batteries tested failed to meet the specification requiring the supplying of 300 amperes for at least 3.3 minutes before the terminal voltage drops to 3.0 volts, on a battery cooled to 0°F .

DDT in Human Body One of the investigators who carried out the studies on DDT in human fat points out that the degradation product DDE is considered to be less toxic than DDT—a fact which was not brought out in the original publication in the journal *Science*. Thus, he concludes, the most recent information indicates that the storage in human fat of DDT and compounds derived from DDT may be less harmful than was supposed when the fact of storage in body fat was discovered several years ago.

Electric Irons
Pages 5, 8, 9
Aug. '53 Bulletin

The *General Mills GMIBB* iron is identified in advertising as being the *Tru-Heat* iron "Sponsored by Betty Crocker." It may be that some readers of the advertising and of CR's BULLETIN will identify this iron more readily by the "Betty Crocker" name or by the name *Tru-Heat*.

The name of the model of the *Universal* iron should be "*Stroke-Sav-r*" (not "*Stoke-Sav-r*").

New Treads on Old Automobile Tires

THE retreading and recapping of automobile, truck, and tractor tires is now a big business in the United States; in 1949 one trade source estimated that over 8 million passenger car tires, about one-fifth of the number of new tires sold for replacement, would be recapped. (Figures for more recent years were not available.) Many motorists, however, are not disposed to have worn tires retreaded because they recall the poor performance such tires gave during World War II when tires were so scarce that many owners of necessity had tires recapped or retreaded. Others feel that the cost of retreading is so high that, considering the risk of rapid wear or of blow-outs, it is wiser to purchase a new tire than to retread an old one. During the war period rubber was under strict government control, and the retreading material the shops were permitted to use was of extremely low grade, containing no virgin rubber; customers were lucky to obtain even a few thousand miles before the new tread was again worn down.

With synthetic rubber in good supply, tires are now being rebuilt so that they are the equal of and in some cases, it is said, even better than new tires in tire mileage. This is not to say that all rebuilt tires are good, for in regions where there is close competition, low-grade material with large amounts of filler substances (adulterants) is being used in order to cut costs.

The material used for recapping and retreading is called "camelback" in the trade, and consists of a rubber compound made up of synthetic or natural rubber, filler, and in some cases reclaimed rubber. Although designated Grade A and Grade C, such terms have little meaning in the trade. Federal Specifications require Grade A to contain 60 percent new synthetic rubber by volume and Grade C 40 percent, but Grade A of one manufacturer is likely to be entirely different in quality from the same grade of another manufacturer where government purchases are not involved. A tire can be "retreaded," "full recapped," "top capped," or "regrooved."

Retreading

When a tire is retreaded, the old tread, "breaker strip," and "cushion" are removed entirely, leaving the cord carcass exposed. The carcass is then placed in a dustproof drying room where it is kept from 12 to 36 hours at a temperature around 120°F until all moisture

has been removed. (Failure to do this and thoroughly to clean the surface may mean poor adhesion between the new material and the tire, and result in early failure.)

Next a new cushion and breaker strip are cemented to the carcass, and the cement is allowed to dry. Following this, a strip of "camelback" of the desired thickness and length is cemented and rolled into place. The rolling may be done either by hand or by machine, but it is vitally important that all air pockets be removed to ensure a good bond. The width of this "camelback" strip is such that it covers the tread, and its thin edge extends down along the sidewall to join up with the old sidewall (see Figure 1). A curing tube, similar to an automobile inner tube but much thicker, is placed in the tire and the entire assembly mounted on an adjustable rim.

It is next placed in a hot mold and the curing tube inflated. The tire is then baked under combined pressure and heat for several hours. This forms the tread, vulcanizes and "cures" the rubber, and provides the bond between the new rubber and the old, through vulcanizing of the cement upon which the camelback, breaker strip, and cushion were laid.

Retreading is little used today, having been discontinued in favor of full recapping.

Full Recapping

In this process the tire is placed on a machine and the worn tread and shoulders are "buffed" to remove uneven tread wear, and to make the carcass a true circle. The breaker strip and cushion are not removed. The tire is then dried to remove moisture, and the surface thoroughly cleaned. Two coats of vulcanizing cement are then applied to the buffed surface and allowed to dry. Camelback, of a thickness depending upon the depth of tread to be produced, is next applied to the buffed surface, and the procedure from then on is essentially the same as for retreading. (See Figure 2 for a section of a full-recapped tire.)

It is obvious that any skimping or careless workmanship in the buffing, drying, or cementing procedures will result in a tire of poor quality that may be subject to early failure. However, premature tire failure may not always indicate poor workmanship in recapping, for it may in some cases be the result of recapping a tire car-

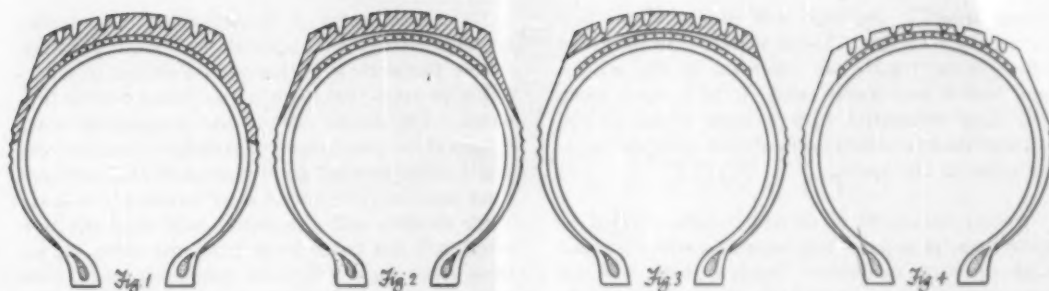


Fig 1
Retreaded Tire.
Shaded area at tread shows where new rubber compound is added and cemented to tire carcass, in retreading.

Fig 2
Full-Recapped Tire.
Shaded tread area shows new rubber compound cemented to tire carcass.

Fig 3
Recapped or Top-Capped Tire.
Shaded area shows the new rubber compound added and cemented to tire carcass.

Fig 4
Regrooved Tire.
No new rubber compound added, and some of old rubber removed.

case with a concealed or buried defect not noted when the tire was inspected before recapping.

Top Capping

This is essentially the same as full recapping, except that a narrower strip of camelback is used, as in Figure 3, covering only the tread and not extending over the sidewalls. Some, experienced in this field, consider top capping better than full recapping, its only disadvantage being that it does not look as well as a full-recapped tire.

Regrooving

When the tread of a tire is worn down to the point where the tread pattern is almost gone, the tire can be *regrooved*, if there is a sufficient depth of tread rubber to permit the grooves to be cut without cutting into the breaker strip or carcass. Most tires, when they reach the smooth-tread stage, do not have sufficient rubber left to warrant regrooving. Some premium-priced tires, such as *U.S. Royal Masters*, which when new have a fairly thick tread can be regrooved satisfactorily. Regrooving will not increase the life of a tire, of course; it merely restores to the tire some of the non-skid properties possessed by the tread design that has been worn away.

Does it pay to have new treads put on tires?

This is the question most frequently asked by the consumer, and the answer depends upon several factors. First is the question of price. In general, a top-quality full recap can be obtained, with the customer providing the tire, for about half the list price of a new "first-line"

tire. For a 6.70 x 15 tire, a full recap will cost about \$12; a new first-line (not premium) tire of the same size lists at \$24 up, plus federal tax. The price actually paid for the new tire will usually be somewhat lower than list price, depending on the amount allowed by the dealer for the "trade-in" tire. The discount due to trade-in and other factors may vary considerably in different localities, at different seasons of the year, and with competitive conditions, the condition of the old tire, and the condition of the tire market. The saving on having a tire recapped would seem to be worth while providing the tire to be recapped is in good condition, with no breaks in the sidewall, or cords, no radial cracks, and the rubber of the tire is in good condition. A casing that has been repaired should not be recapped. The more expensive the tire was originally, the greater the savings by recapping will be over purchasing a new tire of the same quality. One exception to this will be for those who purchase mail-order tires. First-line tires of Sears, Roebuck & Co. and Montgomery Ward & Co. in the 6.70 x 15 size list at about \$15.50, plus freight, and the saving in purchasing a recap tire is hardly warranted for a person accustomed to buying by mail from one of the two big mail-order firms. (Sears' tires are guaranteed for 18 months; Montgomery Ward's are "fully warranted" . . . "without limit of months or miles used." We do not know how Montgomery Ward interpret the term "fully warranted," or what is the basis for cost adjustment. Both Sears and Ward will refund transportation costs paid on a defective or short-lived tire according to guarantee terms published in their catalogs.)

Snow and Mud Tires

Worn regular tires can be recapped with a

"snow tread"; the cost will run to about \$13 for a 6.70 x 15 tire. Those who live in localities where snow treads are essential in the winter may find it well worth while to have their worn rear tires retreaded with a snow tread in the fall and then to purchase new tires with the regular tread in the spring.

If you decide to have new treads applied to your tires, it is most important to select a reputable operator or dealer. Such a dealer will not hesitate to provide a written guarantee of satis-

factory service for a minimum of 12 months against defects in material and workmanship. Before the work is authorized, it should be clearly understood that such a guarantee will be provided. The actual cost to the recapper of making good on guarantees of recapped tires is very small when he uses good materials and methods (less than one percent of sales income, it is said). Some dealers will guarantee only that the new tread will not come loose from the tire; we believe that such a limited guarantee is of little value to the consumer.

Warning to Users of Anti-Freeze

ANTI-FREEZE products including the now widely used methanol (methyl alcohol) preparations almost always contain a rust inhibitor which has been added to reduce the tendency to rust and corrode the engine and other parts in contact with the water in the cooling system. (Presence of an inhibitor—or some ingredient to protect against rust or corrosion—is usually indicated on the label of the can.) This inhibitor may not be compatible with the rust inhibitor used in the water in the radiator during the summer (and use of such an inhibitor—priced at about 50 cents for enough for one car—is de-

sirable). Therefore it is important to drain and discard the inhibited cooling water used during the summer; the system should then be thoroughly flushed before anti-freeze is introduced in the fall. The car owner should never add one of the commercial rust-inhibiting products to water in his radiator that contains an anti-freeze which itself has an inhibitor; two rust inhibitors so mixed may be incompatible, and so may do more harm than good. For the same reason, it is best that different brands of anti-freeze should not be mixed in one cooling system.

Novel Tire Chain, Quickly Applied

AS tire chains are usually hard to install and remove, and because the chore is difficult to do without getting clothes dirty or wet, most motorists have the work performed by service station men whenever possible. There are times, however, when the motorist must apply skid chains himself. The Cleveland Chain & Mfg. Co. have greatly simplified the application of chains with their *Minit-On* tire chains. These chains differ from the ordinary kind only in that one of the side chains is replaced by a cable; this cable is in two parts which are connected together, at the ends and then in the middle, by a special kind of fastener. The instructions are well illustrated, and after practicing the installation and removal a few times, a car owner can learn to install the chains in a minute or less per wheel. (Plastic sleeve guards are provided to protect the clothing.) The cross chains are standard and can be replaced by cross chains of any make.

The car does not need to be jacked up, nor does it have to be rolled forward or back in installing the chains; a short movement may be necessary, however, when the chains are removed.

No durability tests had been carried out by



CR at the time this brief note was written.

Minit-On tire chains are manufactured by The Cleveland Chain & Mfg. Co., Broadway Ave., Cleveland 5, and 10 affiliated companies; the list price is \$14.75 per pair, including rubber chain tighteners. (Ordinary chains are priced at about \$11.)

Home Power Plants

THERE HAVE BEEN in recent years a surprising number of long interruptions of electric power occasioned by severe wind and sleet storms in several sections of the country. Interruption of current supply has caused serious inconvenience and danger to health of many families that have food freezers, oil burners, and electric water-pump systems and cooking appliances. Occurrences of this kind are inevitable in some regions and will occur occasionally almost anywhere. For this reason, many suburban and rural dwellers and persons in some small cities and towns may wish to make provision for maintaining at least a minimum of family cooking and heating operations during a power outage of several days, unless they can afford to move into living quarters in a city or a hotel near by, and know that such accommodations will surely be available. The present trend toward decentralization of population has made this more important than hitherto, and consumers are showing interest in small power plants that can take over part of the load of the normal electric power system when it fails. While the subject is not of importance to a sufficiently large number of our readers to warrant tests of the several lines of small power plants now available, a number of points are given here that should be helpful to persons who are thinking of purchasing a home power unit.

The smallest units are of little value in an emergency. The 400-watt unit (which costs about \$200) can light four 100-watt bulbs, and the 750- and 1000-watt units (\$250 and \$350, approximately) would supply some additional lighting but could operate only the smallest motors, such as the ones used on portable electric fans, kitchen exhaust fans, or food mixers; small capacity generators do not have sufficient output to pull a heavy load on starting, as would be required with a refrigerator, large freezer, etc. The 1500- and 2000-watt units (\$400 to \$650) are large enough to operate a single $\frac{1}{4}$ horsepower motor in most cases, and possibly one of larger size, $\frac{1}{3}$ to $\frac{1}{2}$ horsepower, but they should not be relied upon to carry such a load and also house lighting unless they can be attended con-

stantly (a refrigerator or freezer motor, for example, may call for current while several lights are turned on). The operation of electric cooking units such as a broiler or roaster, or range top or oven burners, is out of the question for small-sized home power plants or even for a fairly large one. The same is of course true of electric room heaters.

A 3000-watt unit (\$650 and up) is, in CR's opinion, the smallest that will serve the average home in a power outage. This size will operate an electric refrigerator, or washing machine, or iron, and at the same time supply some lighting. A 5000-watt unit (about \$1200) is about the smallest that would provide continued, nearly normal living in the average home in an emergency, and a 10,000-watt unit (\$1800) is the smallest size that would serve if an electric range or other large-sized heating appliance is to be used. (A single large burner on an electric stove is rated usually at 2000 or more watts, and an electric oven when set at preheat may require 6000 watts or more.) Even the largest home power units should not be left to operate without attendance, since there are possibilities of overloading inherent in the smallness of the power supply compared with the size of the total potential load.

Some important precautions: (1) If the power unit must be installed within the house—which is decidedly not a recommended practice—the venting of the gasoline engine exhaust fumes to the outside air must be complete and carried out with the utmost care and attention to detail; even a small exhaust leak could cause illness or even death to someone in the home. (2) The fuel tank must be of such size and so located (below the engine, with a fuel pump to lift the fuel to the carburetor) as to comply with the National Board of Fire Underwriters' regulations. (3) A unit supplying alternating current is preferred unless it should be the case, as is very unusual, that the commercial power supply is direct current; only relatively few motors will operate on d.c. (4) If in doubt about what size of unit to purchase: to estimate the capacity in watts required, multiply the wattage (or volt-

ampere ratings—volts times amperes) ratings of all lights and appliances that may be on at any one time by 1.3. *Most small motors require from two to three times their rated operating current at starting.* (Split-phase motors [the cheapest kind of fractional horsepower motors], however, may require up to six times rated operating current when starting.) It is necessary to allow for the possibility that several will start at the same time, e.g., refrigerator, freezer, washing machine, water pump, etc., unless someone is around to disconnect certain units part of the time, at least, so that the power plant shall not be overloaded. Energy consumption figures for $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$ horsepower motors are respectively 250, 350, and 400 watts, approximately. (5) Electric clocks will not keep correct time on the home power units. (6) Operation of oil burners is possible, but special precautions are sometimes required. Consult the manufacturer or distributor of your burner for instructions. (7) If you buy a small power plant for home use, you must operate it at regular intervals, perhaps once every two or three weeks (if you do not, it is rather likely it will not be in working order

when you need it). The storage battery used in starting some of the larger units is a particularly weak link in this respect and may require a small charger (about \$9) as an accessory to be operated for a time every two or three weeks, as well as regular replenishment of water in the cells. (8) The final hookup of the unit into the house wiring system should be done only by a professional electrician, and his advice and instructions about proper use of the unit followed. (9) War-surplus power plants—often advertised in big city newspapers' classified advertising columns—are not considered a good buy unless of a standard make and model for which parts are currently available, and unless sold with a *clearly worded, 100%-money-back guarantee* to refund in full if found unsatisfactory for any reason. Many of these power plants have been in storage for years and may suffer from the effects of corrosion, so that they could not be depended on to run without trouble or need for servicing which may be quite expensive. Some may be odd or obsolete models on which repairs would be difficult or even impracticable.

Pocket Name Stamps

A HANDY GADGET for those who must often set down their name and address is a name stamp and stamp pad small and light enough to be carried around easily in a pocket or purse. These "pocket printers" which have been frequently advertised in Sunday newspapers and elsewhere, of late, usually offer three lines of type on a rubber stamp enclosed in a molded plastic or stamped metal case, and sell at about \$1. CR has purchased and tried several of these and has found them satisfactory. Those with plastic cases are preferred as they have a smoother and more pleasing finish and are lighter, weighing from $\frac{1}{4}$ to $\frac{1}{2}$ ounce compared to about $\frac{3}{4}$ ounce for the metal ones. The cases are approximately the same size— $\frac{3}{8}$ x $\frac{5}{8}$ x $2\frac{1}{4}$ inches—except the Assco which is slightly larger. All of the stamps CR tested produced clear, easily readable lettering.

A. Recommended

Bauer-Lee & Co. (250 Rancho Rd., Sierra Madre 1, Calif.) \$1. Blue-inked pad in a black plastic case

which is well finished. All capitals—name in slightly larger letters than address.

Sunset House (Dept. P-14, 8800 Sunset Blvd., Hollywood 46) \$1. Blue-inked pad in a well-finished black plastic case. All capitals—name in slightly larger letters than address.

* * *

The following are not considered as desirable in some respects as the foregoing.

Assco Products Co. (20 W. 22 St., New York 10) \$1. Black-inked pad in a brown plastic case which is fairly well finished. Name and address in capital letters of one size.

Warner Stationery Co. (355 Green St., Havre de Grace, Md.) \$1. Blue-inked pad in a plated brass case which is fairly well finished. Name and address in capital letters of the same size.

B. Intermediate

Samuel H. Moss, Inc. (36 E. 23 St., New York 10) \$1. Blue-inked pad in a stainless metal case, which is not well finished. Name in large capital letters, and address in smaller upper and lower case letters.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines — some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Cus. Daily News (N.Y.), The Exhibitor, The Film Journal, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, New York World-Telegram & Sun, Parents' Magazine, Release of the D.A.R., Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, Time, Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fant—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C	
—	8	1	Abbott and Costello Meet Dr. Jekyll and Mr. Hyde.....com AY
2	9	4	Actress, The.....dr A
—	3	2	Affair in Monte Carlo (British).....dr-c A
—	2	9	Affair with a Stranger.....dr A
—	2	5	Affairs of Dobie Gillis, The.....mus-com A
—	1	2	Affairs of Messalina, The (Italian).....hist-dr A
—	10	1	All American, The.....dr AY
—	5	7	All I Desire.....dr A
1	3	1	All the Brothers Were Valiant.....adv-c A
—	6	9	Arena.....wes-c A
1	6	7	Arrowhead.....mel-c A
1	7	2	Assassin, The (British).....cri-mel A
—	3	3	Back to God's Country.....mel-c A
—	1	4	Bad Blonde (British).....cri-mel A
8	9	—	Band Wagon, The.....mus-com-c A
—	5	3	Bandits of the West.....wes AY
—	7	9	Beast from 20,000 Fathoms, The.....sci AY
3	10	4	Beggar's Opera, The (British).....mus-dr-c A
1	3	3	Bellissima (Italian).....dr A
3	10	2	Below the Sahara.....doc-trav-c AY
1	8	1	Big Heat, The.....cri-mel A
—	9	2	Big Leaguer, The.....dr AY
—	1	4	Blades of the Musketeers.....adv AY
1	4	4	Blowing Wild.....mel A
—	12	2	Blueprint for Murder, A.....cri-mel A
—	2	3	Botany Bay.....adv-c A

A	B	C	
—	11	6	Caddy, The.....mus-com AY
1	5	2	Calamity Jane.....mus-wes-c AY
—	—	5	Captain Scarlett.....adv-c AY
1	8	1	Captain's Paradise, The (British).....com A
—	4	2	Champ for a Day.....mel A
—	10	4	Charge at Feather River, The.....wes-c A
—	5	3	China Venture.....war-mel-c A
—	3	3	Cinderella (Italian).....mus-dr AY
6	5	—	Cinerama.....doc-c AY
—	5	—	City is Dark, The.....mys-mel A
—	7	6	City of Bad Men.....wes-c A
—	5	6	City that Never Sleeps, The.....cri-mel A
—	2	1	Clipped Wings.....war-com A
—	2	8	Column South.....mel-c AY
—	2	5	Combat Squad.....war-mel AY
—	6	2	Conquest of Cochise.....hist-mel-c AY
—	—	3	Counterfeiters, The (Italian).....mel A
—	3	3	Cow Country.....wes A
—	4	—	Crazylegs, All American.....dr AY
4	10	3	Cruel Sea, The (British).....nov AY
—	7	4	Cruisin' Down the River.....mus-com AY
—	9	6	Dangerous Crossing.....mys-mel AY
1	14	—	Dangerous When Wet.....mus-com-c A
—	—	4	Decameron Nights.....rom-c A
3	6	6	Desert Rats, The.....war-dr AY
—	9	8	Desert Song, The.....mus-com-c AY
—	7	5	Desperate Moment (British).....mel A
—	4	10	Devil's Canyon.....mel-c A
—	—	6	Devil's Plot (British).....mel A
—	4	3	Diamond Queen, The.....adv-c AY
—	2	3	Donovan's Brain.....sci-mel A
—	—	3	Doomed (Italian).....mel A
—	—	7	Double Confession (British).....cri-mel A
—	4	3	Down Laredo Way.....wes AY
—	2	10	East of Sumatra.....adv-c A
—	—	4	El Paso Stampede.....wes AY
—	5	—	Elizabeth is Queen (British).....doc-c AY
—	4	8	Fair Wind to Java.....adv-c A
—	10	1	Fanfan the Tulip (French).....adv AY
—	2	10	Farmer Takes a Wife.....mus-com-c A
—	2	1	Fighting Lawman, The.....mel AY
—	2	5	Flame of Calcutta.....mel-c A
—	—	6	Flight to Tangier.....cri-mel A
—	7	—	Forever Female.....com A
—	1	5	Fort Algiers.....mys-mel A
—	2	12	Fort Ti.....war-mel-c AY
—	6	3	49th Man, The.....mys-mel AY
—	8	1	Francis Covers the Big Town.....com AY
—	1	3	Frightened Bride, The (British).....dr A
14	4	1	From Here to Eternity.....war-dr A
—	5	—	Gay Adventure, The (British).....dr A
—	4	2	Genghis Khan (Philippines).....mel A
—	5	6	Gentle Gunman, The (British).....mel A
1	8	5	Gentlemen Prefer Blondes.....mus-com-c A
—	—	6	Ghost Ship (British).....mel A
—	—	—	Gilbert & Sullivan (see Story of)
—	7	8	Girl Next Door, The.....mus-com AY
—	5	—	Glass Webb, The.....mys-mel A
—	10	1	Glory Brigade.....war-dr AY
—	5	5	Golden Blade, The.....adv-c AY
—	2	2	Grapes Are Ripe, The (German).....com AY
—	2	3	Great Jesse James Raid, The.....wes-c AY
—	5	6	Great Sioux Uprising, The.....mel-c AY
—	1	7	Guerrilla Girl.....mel A
—	10	1	Gun Belt.....wes-c AY
—	6	4	Half a Hero.....com AY
—	2	5	Hannah Lee.....wes-c A
—	3	1	Here Come the Girls.....mus-com-c AY

A	B	C	
13	2	Houdini.....	biog-c AYC
2	3	How to Marry a Millionaire.....	com-c AY
8	1	Hundred Hour Hunt (British).....	mys-mel A
2	13	I, the Jury.....	cri-mel A
1	11	Inferno.....	mel A
5	3	Iron Mountain Trail.....	wes AYC
4	6	Island in the Sky.....	dr AYC
12	4	It Came from Outer Space.....	sci AYC
2	5	It Started in Paradise (British).....	dr-c A
1	1	Jack Slade.....	wes A
1	5	Joe Louis Story, The.....	biog AY
1	3	Johnny the Giant Killer (French).....	car-c AYC
2	1	Journey to Love (Italian).....	com A
2	11	Juggler, The.....	dr AY
13	5	Julius Caesar.....	dr AYC
6	5	Keepers of the Night (German).....	dr A
9	2	Kid from Left Field, The.....	com AYC
4	4	Kiss Me Kate.....	mus-com-c A
3	4	Landfall (British).....	war-dr A
8	2	Last Posse, The.....	wes A
1	7	Latin Lovers.....	mus-com-c A
9	7	Let's Do It Again.....	mus-com-c A
8	4	Lion is in the Streets, A.....	dr-c A
5	10	Little Boy Lost.....	mus-dr AYC
3	4	Little Fugitive, The.....	dr A
3	2	Living Desert, The.....	doc-c AYC
6	—	Long Memory, The (British).....	cri-mel A
3	1	Louisiana Territory.....	trav-c AY
1	2	Love Island.....	adv-c A
1	7	Mahatma Ghandi.....	doc-biog AY
6	10	Main Street to Broadway.....	dr A
8	4	Man from the Alamo, The.....	wes-c AYC
2	1	Marksmen, The.....	wes AYC
4	3	Marry Me Again.....	com A
7	—	Marshal's Daughter, The.....	mus-wes AYC
3	7	Martin Luther.....	doc-biog A
3	1	Mask of the Himalayas.....	dr A
11	2	Master of Ballentrac.....	adv-c AYC
3	4	Maze, The.....	mys-mel A
2	7	Melba.....	mus-biog-c AYC
1	2	Mexican Manhunt.....	mel AY
2	7	Mission Over Korea.....	war-mel AY
1	11	Mister Scoutmaster.....	com AYC
4	5	Mogambo.....	adv-c A
11	4	Moon is Blue, The.....	com A
2	8	Moonlighter, The.....	wes A
7	3	Mr. Denning Drives North (British).....	mys-mel A
7	6	Mr. Potts Goes to Moscow (British).....	com A
6	1	Murder on Monday (British).....	cri-mel AY
3	4	Murder Without Tears.....	cri-mel A
1	4	Mystery Lake.....	doc-c AYC
5	5	Night in My Kingdom, The (French).....	dr A
3	6	Night Without Stars (British).....	dr A
3	11	99 River Street.....	cri-mel A
3	6	No Escape.....	cri-mel A
5	—	Northern Patrol.....	mel AYC
3	6	O.K. Nero (Italian).....	com A
4	2	Overcoat, The (Italian).....	dr A
1	5	Pack Train.....	wes AYC
3	3	Paris Express, the (British).....	mys-mel-c A
1	9	Perilous Journey, A.....	mel A
3	5	Phantom from Space.....	sci AY
1	8	Pickup on South Street.....	cri-mel A
6	8	Plunder of the Sun.....	mel A
5	8	Powder River.....	wes-c A
5	—	Project Moonbase.....	sci AY
2	3	Prowlers of the Everglades.....	doc-c AYC
11	4	Queen is Crowned, A (British).....	doc-c AYC
2	7	Raiders of the Seven Seas.....	adv-c AYC
3	—	Rebel City.....	wes AYC
8	3	Remains to be Seen.....	mus-mel A
3	6	Return to Paradise.....	dr-c A
6	9	Ride, Vaquero.....	wes-c A
8	4	Ring Around the Clock (Italian).....	dr A

A	B	C	
4	2	Roar of the Crowd.....	mel-c AYC
6	4	Robe, The.....	dr-c AYC
8	9	Roman Holiday.....	com A
2	5	Rome, 11 O'Clock (Italian).....	dr A
1	4	Royal African Rifles, The.....	war-mel-c A
—	4	Run for the Hills.....	com AYC
—	4	Sabre Jet.....	war-dr-c AYC
—	4	Safari Drums.....	mel AYC
—	2	Saginaw Trail.....	mus-wes AY
5	6	Sailor of the King (British).....	nov A
—	8	Sangaree.....	mel-c A
—	1	Savage Frontier.....	wes AYC
1	10	Scandal at Scourie.....	dr-c A
3	11	Sea Devils.....	adv-c A
2	1	Sea of Lost Ships.....	dr AYC
15	1	Second Chance.....	mel-c A
3	1	Secret Conclave, The (Italian).....	biog AY
2	8	Seven Deadly Sins, The (French).....	dr A
2	2	Shadows of Tombstone.....	wes AYC
5	6	Shoot First.....	mys-mel AYC
5	4	Siren of Bagdad.....	mel-c AY
5	5	Sky Commando.....	war-mel AYC
1	2	Slasher, The (British).....	cri-mel A
2	5	Slaves of Babylon.....	hist-c AY
3	6	Slight Case of Larceny, A.....	com A
1	5	So Big.....	dr AY
5	3	So Little Time (British).....	war-dr A
1	12	So This is Love.....	mus-biog-c AYC
4	7	Something Money Can't Buy (British).....	com A
4	2	Son of Belle Starr.....	wes-c A
5	9	South Sea Woman.....	war-mel A
2	4	Spaceways (British).....	sci A
8	9	Stalag 17.....	war-com A
1	6	Stand at Apache River, The.....	wes-c AYC
1	4	Steel Lady, The.....	mel AYC
2	5	Story of Gilbert and Sullivan (British).....	mus-biog-c AYC
1	8	Strange Deception (Italian).....	war-dr A
1	12	Stranger Wore a Gun, The.....	wes-c AY
3	6	Sun Shines Bright, The.....	dr A
7	1	Sweethearts on Parade.....	mus-com-c AYC
14	3	Sword and the Rose, The.....	nov-c A
6	4	Take Me to Town.....	mus-dr-c A
5	2	Take the High Ground.....	war-dr-c A
2	6	Tanga Tika.....	dr-c A
1	5	Tarzan and the She Devil.....	mel A
5	2	Terror on a Train (British).....	mys-mel A
1	6	That Man from Tangier.....	mel A
7	3	Those Redheads from Seattle.....	mus-com-c AY
5	3	Three Girls from Rome (Italian).....	dr A
1	11	Thunder Bay.....	mel-c AY
1	8	Thy Neighbor's Wife.....	dr A
3	3	Time, Gentlemen, Please! (British).....	com A
4	2	Times Gone By (Italian).....	dr A
1	9	Titfield Thunderbolt (British).....	com-c AYC
8	3	Tonight at 8:30.....	dr A
1	2	Topeka.....	wes AYC
9	2	Torch Song.....	dr-c A
—	3	Trail of the Arrow.....	wes AYC
1	5	Trent's Last Case (British).....	cri-mel A
—	4	Twonky, The.....	sci AYC
2	6	Valley of the Headhunters.....	adv-c AYC
5	5	Vanquished, The.....	war-dr-c A
1	5	Vells of Bagdad, The.....	fan-c A
14	1	Vice Squad.....	cri-mel A
3	8	Vicki.....	cri-mel A
3	6	Village, The (Swiss).....	dr A
1	12	Volcano (Italian).....	dr A
1	5	War Paint.....	mel-c A
5	3	Wherever She Goes (Australian).....	mus-dr AYC
1	9	White Witch Doctor.....	mel-c AYC
6	2	Wings of the Hawk.....	mel-c AY
3	12	Young Bess.....	hist-dr-c AYC
4	2	Young Caruso (Italian).....	mus-biog A

The Consumers' Observation Post

(Continued from page 4)

isher of the fabric cut corners and skimmed on his job to save a few cents on the price charged per yard. The editor of a textile magazine reported, for instance, three examples of white nylon in a shirt, in men's shorts, and lace on a nylon blouse that had turned an unsatisfactory color after they had been laundered. Such garments should, of course, be returned to the store from which they were purchased, with a request for a refund in full. Wise consumers who do not wish to be inconvenienced by such occurrences will request the stores with which they are accustomed to deal to specify that all textiles and garments offered for sale that are made of rayon and acetate conform to American Standard L22. No doubt there will be similar standards developed for other fibers in due course.

* * *

SIX MEALS A DAY are recommended for workers in heavy industry, reports Science News Letter. To maintain workers' efficiency, several snacks between meals are considered essential, particularly when work begins early in the morning. Restlessness, irritability, and decreased ability to concentrate were found in one study to go with long intervals between meals.

* * *

SIGNS OF QUALITY IN FURNITURE CONSTRUCTION are briefly indicated by Home Furnishings magazine. Here are four details that denote a well-made piece: felt cushioning to provide a protective padding, and to prevent sliding panels and movable sections from scratching highly polished surfaces; bored keyholes; dovetailed construction at front and back of drawers; plywood drawer bottom set into the sides and reinforced with small wood blocks on the underside. These four points the magazine calls the sign language of quality construction.

* * *

SCHOOL ART MATERIALS may sometimes be a source of irritation to the user and even cause injury. In answer to an inquiry from a physician, the editor of the American Medical Association pointed out that the methyl violet pigment in indelible pencils is a direct damaging agent to the eyes, if particles come in contact with them; wax crayons colored with aniline dyes may cause methemoglobinemia (a disturbance of the blood) if they are nibbled by children, as they will be at times, no doubt; and turpentine

~~~~~

### How to be a practical dollar-wise Santa Claus

It's really very simple to provide thrifty-minded friends with a much appreciated Christmas gift. Just give them a subscription to Consumers' Research Bulletin PLUS a copy of the big 224-page Annual Cumulative Bulletin, off the press in September 1953. For only \$5, you can provide a year-round present that will help them get the most for money spent on their household purchases and supply needed advice on how to make their selections wisely. More practical than money, a subscription to Consumers' Research often helps consumers to save many times the subscription price—often on a single purchase, they tell us. Give a gift that lasts, that will be remembered and used constantly. Subscription rates, together with a convenient order form, are found on the next page. Just fill out the blank and return it with your remittance.



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used as a paint thinner and brush cleaner is an eye and skin irritant. The editor recommends that brushes be soaked in raw linseed oil rather than turpentine and urges that art supervisors take special care to eliminate hazards to children's health from improper use of classroom materials, and so far as possible to select materials that are free from irritating and sensitizing substances.

\* \* \*

BUG DEFLECTORS on automobiles are frowned on by motor vehicle authorities as detrimental to safe driving. The objection to use of these devices which are mounted on the hood of a car to prevent insects from being splattered on the windshield is that they create blind spots, especially at night. In Connecticut, such deflectors have been outlawed entirely; New Jersey permits their use only if they are completely transparent. It has been recommended by the American Association of Motor Vehicle Administrators that states contemplating the passage of restrictions on bug deflectors follow New Jersey's example.

\* \* \*

#### NEW OR NEWLY TESTED:

Vinylloom Plastic Mat (Designed by FAS, produced by the Forrest Process). \$3.95. 24 in. x 42 in., dark green. Plastic impressed with a braided-rug pattern. Had an attractive appearance and lay flat with no tendency to scuff up or slip underfoot. The mat wore well and kept its color. It was, however, difficult to keep clean because the sharp indentations of the embossed pattern held dust and grime securely so that the mat at intervals had to be scrubbed with a stiff brush and rinsed thoroughly. It was considered more difficult to clean than a cotton throw rug or chenille mat that can be washed in the home washing machine or sent to a commercial laundry. The product was considered worthy of a B-Intermediate rating.

~~~~~



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Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

THE BIG RECORD NEWS this month is the first release of ten 12-inch LP's under the Epic label, listing at \$5.95 each. This comes about as a result of an agreement between Columbia and the Phillips organization of Europe. I have heard Dvorak's *New World Symphony*, Beethoven's *Fifth*, Berlioz's *Symphonie Fantastique*, Tchaikovsky's *Pathétique*, Schubert's *Unfinished* coupled with Mozart's *Haffner*, Strauss Waltzes, Grieg's two *Peer Gynt Suites*, Tchaikovsky's *Piano Concerto No. 1*, Rachmaninoff's *Piano Concerto No. 2*, Tchaikovsky's *Romeo and Juliet* plus 1812 plus *Capriccio Italien*. These are performed by the Berlin Philharmonic, Concertgebouw Orchestra of Amsterdam, Hague Philharmonic, Vienna Symphony. . . . With the exception of the Strauss Waltzes, and the *Peer Gynt Suites*, the fidelity is rated from recommended to highly recommended. It varies in frequency range and balance with each orchestra. The playing is thoroughly enjoyable. A good record to start with: Schubert's *Unfinished* coupled with Mozart's *Haffner*, LC 3006.

FULL DIMENSIONAL SOUND. Capitol SAL 9020. \$6.75. The record I heard most often in hi-fi demonstrations at the Audio show in New York City in mid-October. The wide range of sound, instrumentation, and effect in its 14 bands of music help test and demonstrate playback equipment. An informative 12-page booklet discusses various aspects of the music and recording techniques. Highly recommended for hi-fi enthusiasts.

Bach: *St. Matthew Passion*. Laszlo, Majdan, Munteanu, Cuenod, Rebuss, etc., under Scherchen. 8 sides, Westminster Set WAL 401. \$23.40. Vienna gives us a recording of this masterpiece of sacred music which is superior to last month's Columbia release from Amsterdam. Scherchen makes the work sound less weighty. Yet he does not fuss with the phrasing and tempi as Mengelberg did. Mengelberg's soloists are more polished but Scherchen's know the style and they strain on very few occasions. AA AA

Beethoven: *Symphony No. 3*. Vienna State Opera Orchestra under Scherchen. Westminster WL 5216. \$5.95. The great "Eroica," played with fine nuance and dignity yet with sufficient force and fire. Deeply satisfying in all respects. AA AA

Beethoven: *Symphony No. 6*. RCA Victor LM 1755. *Symphony No. 7*. RCA Victor LM 1756. *Symphonies Nos. 5 and 8*. RCA Victor LM 1757. NBC Symphony Orchestra under Toscanini. \$5.72 each. Nearly half of Beethoven's symphonic output. Usual dramatic, dynamic, distinctive Toscanini performance. The fidelity of the *Fifth* runs to harsh and thin, but all of the others are satisfactorily recorded. AA AA

Chopin: *Waltzes*. Novas (piano). Vox PL 8170. \$5.95. Clean, cautious, unemotional, strongly rhythmic playing of the complete set of waltzes. Recorded close in, effectively. AA AA

Mascagni: *Cavalleria Rusticana*. Milanov, Bjoerling, Smith, Merrill under Cellini (3 sides) & **Leoncavallo:** *Pagliacci*. Bjoerling, de Los Angeles, Warren, Merrill, etc., under Cellini (3 sides). RCA Victor LM 6106. \$17.16. In *Cavalleria*, Milanov and Merrill are excellent, Bjoerling has some difficulty with a role overdramatic for his lyric style, and Carol Smith as Lola is unimpressive. In *Pagliacci*, Bjoerling again is ill at ease in the heavy moments; de Los Angeles lacks wallop, though her refined

style is a joy at times; Warren and Merrill are first rate. The direction of both operas is all to the good and the recording is full and round. A AA

Massenet: *Werther*. Juyol, Leger, Richard, Bourdin, etc., under Sebastian. 6 sides, Urania URLP 233. \$18.50. Very nearly a first-class performance stemming from the Opéra-Comique de Paris of a passionate, sentimental opera. The singing of Charles Richard in the title role has much to do with the success of the set. Suzanne Juyol as Charlotte is within easy distance of him, too. Sebastian conducts with the fervor of a zealot. The orchestra is a little distant but in other ways the fidelity is excellent. . . . Better performance than heard in Urania's new *Lucia di Lammermoor* set which is also highly recommended for fidelity. A AA

Mendelssohn: *Violin Concerto in E*. Borries with the Berlin Philharmonic under Celebidache and *Symphony No. 4*. Hallé Orchestra under Barbirolli. RCA Victor LBC 1049. \$2.98. Very likely Mendelssohn's best works for instruments. Borries plays the concerto sweetly, but without authority and sparkle. Excellent orchestral support. Whatever merit there is in Barbirolli's conducting of the "Italian" is negated by narrow range recording. B C

Tchaikovsky: *Nutcracker Suite* and *Sleeping Beauty-Ballet Music*. Philadelphia Orchestra under Ormandy. Columbia ML 4729. \$5.45. In the delicate *Nutcracker*, the Philadelphians play the notes—but where's the charm? Excerpts from *Sleeping Beauty* fare better. B A

Verdi: *Otello*. Nelli, Merriman, Vinay, Valdengo, etc., under Toscanini. 6 sides, RCA Victor LM 6107. \$17.16. Taken from the 1947 broadcast and unquestionably "souped up" by the engineers—and quite successfully, too. Great conducting. The entire cast has surpassed the sum of its parts. Easily one of the memorable sets of 1953. AA A

Beautiful Music to Love By. David Rose and His Orchestra. MGM E3067. \$4.85. Largely slow playing of 12 pop tunes by an orchestra featuring violins. A few brief vocals. All in good taste. Included are "Swedish Rhapsody," "Leave It to Love," "Falling in Love with Love," "No Other Love," etc. The violins when playing high on the E string sound a little fuzzy. AA A

Favorites of the National Farm and Home Hour. Vocal Quartet and Orchestra under Berquist. RCA Victor LPM 3144. \$2.62. "Stars and Stripes Forever," "Kentucky Babe," "Camptown Races," "Whistler and His Dog," "Lassus Trombone," and 3 other numbers popular with the audience of this 25-year-old radio program. A A

Folksongs Dramatic and Humorous. Burl Ives (singer). Decca DL 5467. \$3. "Get Along Little Dogies," "Goober Peas," "Golden Vanity," "I Wonder as I Wander" and 5 others. Ives' voice gets more threadbare, but you can still understand every word and he's "sincere." But he does not get the most out of every number. A AA

Love Songs for a Late Evening. Portia Nelson (singer). Columbia ML 4722. \$5.45. Sensitive singing of 12 tunes heard in intimate New York supper clubs: "The Gentleman is a Dope," "Get Out of Town," "Come Away with Me," "Love for Sale," etc. AA AA

Serenades. Victor Young and His Singing Strings. Decca DL 5454. \$3. Eight tunes that have stood the test of our time: "Drigo Serenade," "Student Prince Serenade," "Toselli Serenade," "Drdla Serenade," etc. Played capably. AA AA

Consumers' Research

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